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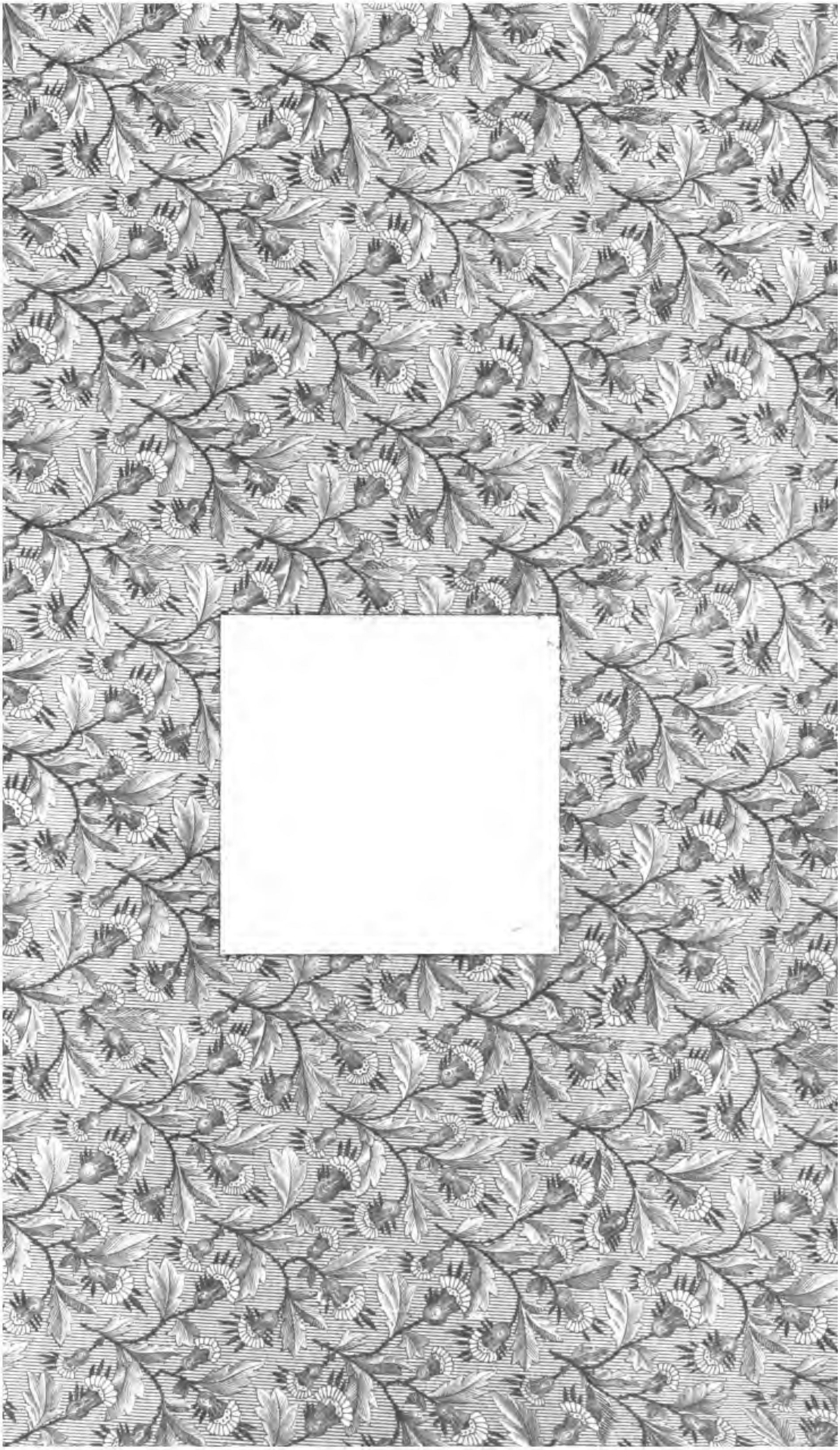

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ERRATA TO BULLETIN 50.

Page 14, insert (9) after expressions for ΔP.

Page 37, latitude 37° 15′ and 45′ longitude, read for X, 20.673 instead of 30.673.

Page 43, latitude 31° 00′ and 10′ longitude, read for abscissa, 9.891 instead of 8.891.

Page 46, latitude 46° 50′, read for meridional distance, 57.557 instead of 57.567.

Page 99, latitude 46° 50′ and 10′ longitude, read for abscissa, 16.687 instead of 11.687.

Page 107, first column of table, thirty-first argument, read 15 30 instead of 15 00.

Page 110, first column of table, seventh argument, read 12 07 30 instead of 12 70 30.

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FORMULAS AND TABLES

TO

FACILITATE THE CONSTRUCTION AND USE OF MAPS

BY

ROBERT SIMPSON WOODWARD

WASHINGTON
GOVERNMENT PRINTING OFFICE
1889

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
Washington, D. C., January 9, 1889.

SIR: I have the honor to transmit herewith, through Mr. Henry Gannett, Geologist in charge of Geography, a series of mathematical formulas and tables designed to facilitate the construction and use of maps.

Manuscript copies of the tables were prepared for the Division of Geography in 1885–6. Constant use since then has demonstrated their utility. They have recently been revised and extended, and are here accompanied by an explanatory text.

The computations required in the preparation and revision of the tables were made chiefly by Mr. B. C. Washington, jr., and Mr. S. S. Gannett, who evinced a commendable zeal to render the work thoroughly accurate.

Very respectfully, your obedient servant,

R. S. WOODWARD,
In charge of Mathematical Division.

Hon. J. W. POWELL,
Director U. S. Geological Survey.

FORMULAS AND TABLES TO FACILITATE THE CONSTRUCTION AND USE OF MAPS.

By R. S. Woodward.

A. THEORY OF THE TABLES.

ADOPTED SPHEROID AND CONSTANTS THEREOF.

(1.) The spheroid on which the data given in the following tables depend is that whose elements were published by Clarke in 1866.* This spheroid undoubtedly represents very closely the true size and shape of the earth, and it is the one to which nearly all geodetic work in the United States is now referred.

The constants of the generating ellipse of this spheroid, whose numerical values are required in the computation of the tabular quantities, are defined as follows:

$$a = \text{semi major axis},$$
$$b = \text{semi minor axis},$$
$$e = \text{eccentricity} = \sqrt{\left(1 - \frac{b^2}{a^2}\right)},$$
$$n = (1 - \sqrt{1 - e^2})\,(1 + \sqrt{1 - e^2})^{-1}.$$

The values of these constants and their logarithms are—

		log.
$a =$	20926062 English feet,	7.3206875,
$b =$	20855121 "	7.3192127,
$e^2 =$	0.00676866,	7.8305030 — 10,
$n =$	0.00169792,	7.2299162 — 10.

PRINCIPAL RADII OF CURVATURE.

(2.) Of the derived quantities essential to the present purposes the most important are the principal radii of curvature of the adopted spheroid; and, as these radii and their reciprocals enter many of the formulas of geodesy, it will be advantageous to give expressions from which their logarithms may be readily computed. At any point on the spheroid let

---

* Comparisons of Standards of Length, made at the Ordnance Survey Office, Southampton, England, by Capt. A. R. Clarke, R. E. Published by order of the Secretary of State for War, 1866.

φ = the astronomical latitude,
ρ_m = the radius of curvature of the meridian section,
ρ_n = the radius of curvature of the section normal to the meridian.

Then the values of the radii are—

$$\begin{aligned} \rho_m &= a\,(1 - e^2)\,(1 - e^2 \sin^2 \varphi),^{-\frac{3}{2}} \\ \rho_n &= a\,(1 - e^2 \sin^2 \varphi).^{-\frac{1}{2}} \end{aligned} \qquad (1)$$

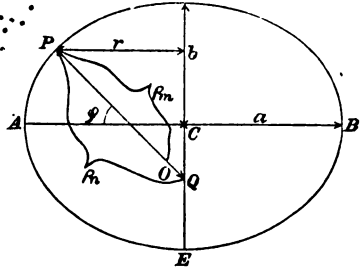

Fig. 1.

The geometrical relations of the quantities just defined are shown in Fig. 1, which represents a meridian section of the spheroid. P is any point whose geographical latitude is φ. Both radii of curvature coincide in direction with the normal PQ. ρ_n is that portion of the normal lying between P and the minor axis DE, or PQ; while ρ_m = PO is always less than ρ_n except when $\varphi = \pm 90°$, in which case the two radii are equal.

The logarithm of the radical which enters formulas (1) may be most readily computed by the following formula, viz:

$$\begin{aligned} \log\,(1 - e^2 \sin^2 \varphi)^{-\frac{1}{2}} = &+ \log\,(1 + n) \\ &- \quad \mu n \cos 2\varphi \\ &+ \tfrac{1}{2}\,\mu n^2 \cos 4\varphi \\ &- \tfrac{1}{3}\,\mu n^3 \cos 6\varphi \\ &+ \;\cdot\;\cdot\;\cdot\;, \end{aligned} \qquad (2)$$

in which n has the value defined above and μ is the modulus of common logarithms. Introducing the values of the constants given above in formulas (1) and (2) there result—

Radius of curvature of meridian section ρ_m in feet.

$$\begin{aligned} \log \rho_m = &+ \;7.3199482 \\ &- [4.34482] \cos 2\varphi \\ &+ [1.274] \cos 4\varphi \\ &- \;\cdot\;\cdot\;\cdot\;; \end{aligned} \qquad (3)$$

Radius of curvature of normal section ρ_n in feet.

$$\begin{aligned} \log \rho_n = &+ \;7.3214243 \\ &- [3.86770] \cos 2\varphi \\ &+ [0.797] \cos 4\varphi \\ &- \;\cdot\;\cdot\;\cdot\;\cdot \end{aligned} \qquad (4)$$

The numbers inclosed in brackets in these formulas are the logarithms of the coefficients of the trigonometrical factors for units of the seventh decimal place.

The formulas (3) and (4) will give log ρ_m and log ρ_n within one unit in the seventh place of decimals, or ρ_m and ρ_n within 1/4000000 part (about 5 feet), an accuracy about fifty times that of the semi axis a. The values of log ρ_m and log ρ_n are given in Tables I and II respectively, for every minute of latitude from latitude 21° to latitude 50°.

LENGTHS OF ARCS OF MERIDIAN.

(3.) For the computation of short meridional arcs lying between given parallels of latitude the following simple formulas suffice:

$$\begin{aligned} \varDelta\varphi &= \varphi_2 - \varphi_1, \\ \varphi &= \tfrac{1}{2}(\varphi_2 + \varphi_1), \\ \varDelta M &= \rho_m \varDelta\varphi. \end{aligned} \tag{5}$$

In these, φ_1 and φ_2 are the latitudes of the ends of the arc, $\varDelta M$ is the required length, and ρ_m is the meridian radius of curvature for the latitude φ of the middle point of the arc. The formula for $\varDelta M$ implies that $\varDelta\varphi$ is expressed in parts of the radius. If $\varDelta\varphi$ is expressed in seconds, minutes, or degrees of arc, the formula becomes—

Meridional distance $\varDelta M$ in feet.

$$\begin{aligned} \varDelta M &= \frac{\rho_m \varDelta\varphi \text{ (in seconds)}}{206264.8}, \\ &= \frac{\rho_m \varDelta\varphi \text{ (in minutes)}}{3437.747}, \\ &= \frac{\rho_m \varDelta\varphi \text{ (in degrees)}}{57.29578}; \end{aligned} \tag{6}$$

$$\begin{aligned} \log(1/206264.8) &= 4.6855749 - 10, \\ \log(1/3437.747) &= 6.4637261 - 10, \\ \log(1/57.29578) &= 8.2418774 - 10. \end{aligned}$$

φ_1, φ_2 = end latitudes of arc, $\varDelta\varphi = \varphi_2 - \varphi_1$,

ρ_m = meridian radius of curvature for $\varphi = \tfrac{1}{2}(\varphi_2 + \varphi_1)$; for log ρ_m see Table I.

The relations (6) will answer most practical purposes when $\varDelta\varphi$ does not exceed 5°. A comparison with the precise formula (7) below shows in fact that the error of (6) is very nearly

$$\tfrac{1}{8} e^2 \varDelta\varphi^2 \cos 2\varphi \,.\, \varDelta M,$$

which vanishes for $\varphi = 45°$, and which for $\varDelta\varphi \doteq 5°$ is at most $\frac{1}{1550000} \varDelta M$, or about 11 feet.

Numerical example. Suppose—

$$\begin{aligned} \varphi_2 &= 37° \; 29' \; 48''.17, \\ \varphi_1 &= 35° \; 48' \; 29''.89. \end{aligned}$$

Then

$$\begin{aligned} \varphi &= \tfrac{1}{2}(\varphi_2 + \varphi_1) = 36^\circ\ 39'\ \ 09''.03, \\ \Delta\varphi &= \quad \varphi_2 - \varphi_1 = \ 1^\circ\ 41'\ \ 18''.28, \\ &= \qquad\qquad 6078''.28. \end{aligned}$$

From the first of (6)

cons't. log	4.6855749 — 10
Table I, log ρ_m	7.3193112
log $\Delta\varphi$	3.7837807
ΔM = 614705 feet, log ΔM	5.7886668

The values of ΔM for intervals of 10″, 20″ . . . 60″, and for 10′, 20′ . . . 60′ are given in Table III for each degree of latitude from 25° to 49°.

For precise computation of long meridional arcs the following formula is adequate:

$$\begin{aligned} \Delta M = A_0\,\Delta\varphi &- A_1 \cos 2\varphi \sin \Delta\varphi \\ &+ A_2 \cos 4\varphi \sin 2\Delta\varphi \\ &- A_3 \cos 6\varphi \sin 3\Delta\varphi \\ &+ A_4 \cos 8\varphi \sin 4\Delta\varphi \\ &- \ \ . \ \ . \ \ . \ \ . \end{aligned} \tag{7}$$

In this, ΔM, φ, and $\Delta\varphi$ have the same meanings as above, and A_0, A_1, . . . are functions of a and e or of a and n.

Thus, in terms of a and n,

$$\begin{aligned} A_0 &\doteq a\,(1+n)^{-1}\left(1 + \tfrac{1}{4}n^2 + \tfrac{1}{64}n^4 + \ .\ .\ .\ \right), \\ A_1 &= 3a\,(1+n)^{-1}\left(n - \tfrac{1}{8}n^3 - \ .\ .\ .\ \right), \\ A_2 &= \tfrac{15}{8}\,a\,(1+n)^{-1}\left(n^2 - \tfrac{1}{4}n^4 - \ .\ .\ .\ \right), \\ A_3 &= \tfrac{35}{24}\,a\,(1+n)^{-1}\left(n^3 - \ .\ .\ .\ \right), \\ A_4 &= \tfrac{315}{256}\,a\,(1+n)^{-1}\left(n^4 - \ .\ .\ .\ \right). \end{aligned}$$

Introducing the adopted values of a and n, these constants become—

		log.
A_0 =	20890606 feet,	7.3199510,
A_1 =	106411 feet,	5.0269880,
A_2 =	113 feet,	2.0528,
A_3 =	0.15 feet,	9.174 — 10.

It appears, therefore, that the first three terms of (7) will give ΔM with an accuracy considerably surpassing that of the constant A_0. In the use of (7) it will generally be most convenient to express $\Delta\varphi$ in degrees, and in this case A_0 must be divided by the number of degrees in the radius, viz: 57.2957795 [1.7581226]. Applying this value and writing the logarithms of A_0, A_1, etc., in rectangular brackets in place of A_0, A_1, etc., (7) becomes

Meridional distance ΔM in feet.

$$\begin{aligned} \Delta M = {} & [5.5618284]\ \Delta\varphi\ \text{(in degrees)} \\ & - [5.0269880] \cos 2\varphi \sin \Delta\varphi \\ & + [2.0528] \cos 4\varphi \sin 2\,\Delta\varphi \\ & - \ldots \end{aligned} \tag{8}$$

$2\varphi = \varphi_2 + \varphi_1$, $\Delta\varphi = \varphi_2 - \varphi_1$, $\varphi_1, \varphi_2 =$ end latitudes of arc.

Formula (8) will suffice for the calculation of any portion or the whole of a quadrant. The length of a quadrant is the value of the first term of (8) when $\varphi = 45°$ and $\Delta\varphi = 90°$, since all of the remaining terms vanish.

Numerical examples.—1°. Suppose

$$\varphi_1 = 0° \text{ and } \varphi_2 = 45°.$$

Then

$$2\varphi = 45°,$$
$$\Delta\varphi = 45°.$$

		log.
	cons't	5.5618284
	45	1.6532125
1st term + 16407443 feet	1st term	7.2150409
	cos 2φ	9.8494850 — 10
	sin $\Delta\varphi$	9.8494850 — 10
	cons't	5.0269880
2d term — 53205.7 feet	2d term	4.7259580

The third term of the series vanishes by reason of the factor $\cos 4\varphi = \cos 90° = 0$. The sum of the first two terms, or length of a meridional arc from the equator to the parallel of 45°, is 16354237 feet.

2°. Suppose $\varphi_1 = 45°$ and $\varphi_2 = 90°$.
Then $2\varphi = 135°$,
$\Delta\varphi = 45°$.

The numerical values of the terms will be the same as in the previous example, but the sign of the second term will be *plus*. Hence the length of the meridional arc between the parallel of 45° and the adjacent pole is 16460649 feet. The sum of these two computed distances, or the length of a quadrant, is 32814886 feet.

This agrees as it should with the length given by (8) when $2\varphi = 90°$ and $\varDelta\varphi = 90°$.*

LENGTHS OF ARCS OF PARALLEL.

(4.) The radius of any parallel of latitude is equal to the product of the radius of curvature of the normal section for the same latitude by the cosine of that latitude. That is, see FIG. 1, r being the radius of the parallel—

$$r = \rho_n \cos \varphi,$$

and the entire length of the parallel is—

$$2\,\pi\, r = 2\,\pi\,\rho_n \cos\varphi.$$

Designate the portion of a parallel lying between meridians whose longitudes are λ_1 and λ_2 by $\varDelta P$, and call the difference of longitude $\lambda_2 - \lambda_1$, $\varDelta\lambda$.

Then—

Arc of parallel $\varDelta P$ in feet.

$$\varDelta P = \frac{2\,\pi\,\rho_n \cos\varphi}{1296000}\varDelta\lambda \text{ (in seconds)},$$

$$= \frac{2\,\pi\,\rho_n \cos\varphi}{21600}\varDelta\lambda \text{ (in minutes)},$$

$$= \frac{2\,\pi\,\rho_n \cos\varphi}{360}\varDelta\lambda \text{ (in degrees)}.$$

$$\log\,(2\,\pi/1296000) = 4.6855749 - 10,$$
$$\log\,(2\,\pi/21600) = 6.4637261 - 10,$$
$$\log\,(2\,\pi/360) = 8.2418774 - 10.$$

λ_1, λ_2 = end longitudes of arc, $\varDelta\,\lambda = \lambda_2 - \lambda_1$,

ρ_n = radius of curvature of normal section for latitude of parallel; for log ρ_n see Table II.

Numerical example.—Suppose $\varphi = 35°$, and $\varDelta\lambda = 72°$. Then from the third of (9)

		log.
cons't		8.2418774 — 10
Table II,	ρ_n	7.3211716
	$\cos\varphi$	9.9133645 — 10
	$\varDelta\lambda$	1.8573325
$\varDelta P$ = 21564827 feet,	$\varDelta P$	7.3337460

The values of $\varDelta P$ for intervals of 10″, 20″ . . . 60″, and for 10′, 20′ . . . 60′ are given in Table IV for each degree of latitude from 25° to 49°.

---

* The best formula for computing the entire length of a meridian curve is this:

$$\pi\,(a + b)\,(1 + \tfrac{1}{4}\,n^2 + \tfrac{1}{64}\,n^4 + \;.\;\;.\;\;.\;\;),$$

in which a, b, and n are the same as defined in section (1). For the values here adopted—

	log.
$(1 + \frac{1}{4}\,n^2 + \;.\;\;.\;\;.\;\;)$	0.0000003
$(a + b)$	7.6209807
π	0.4971499
length	8.1181309

The length of the perimeter of the generating ellipse, or the meridian circumference of the earth, is, therefore—

131259550 feet = 24859.76 miles.

CO-ORDINATES FOR THE POLYCONIC PROJECTION OF MAPS.

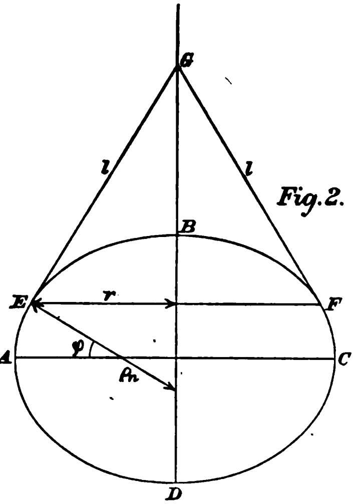

Fig. 2.

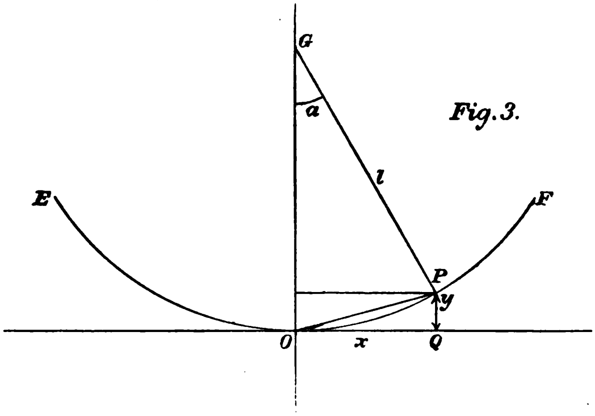

Fig. 3.

(5.) In the polyconic system of map projection every parallel of latitude appears on the map as the developed circumference of the base of a right cone tangent to the spheroid along that parallel. Thus the parallel E F (Fig. 2) will appear in projection as the arc of a circle E O F (Fig. 3) whose radius O G $= l$ is equal to the slant height of the tangent cone E F G (Fig. 2). Evidently one meridian and only one will appear as a straight line. This meridian is generally made the central meridian of the area to be projected. The distances along this central meridian between consecutive parallels are made equal (on the scale of the map) to the real distances along the surface of the spheroid. The circles in which the parallels are developed are not concentric, but their centers all lie on the central meridian. The meridians are concave toward the central meridian, and, except near the corners of maps showing large areas, they cross the parallels at angles differing little from right angles.

In the practical work of map making, the meridians and parallels are most advantageously defined by the co-ordinates of their points of intersection. These co-ordinates may be expressed in the following manner: For any parallel, as E O F (Fig. 3), take the origin O at the intersection with the central meridian, and let the rectangular axes of Y (O G) and X (O Q) be respectively coincident with and perpendicular to this meridian. Call the interval in longitude between the central meridian and the next adjacent one $\Delta\lambda$, and denote the angle at the center G subtended by the developed arc O P by a.

Then from Fig. 3 it appears that

$$x = l \sin a,$$
$$y = 2\, l \sin^2 \tfrac{1}{2} a.$$

But from FIGS. 2 and 3,

$$l = \rho_n \cot\varphi,$$
$$la = r\,\Delta\lambda = \rho_n\,\Delta\lambda\,\cos\varphi,$$

whence

$$a = \Delta\lambda\,\sin\varphi.$$

Hence, in terms of known quantities there result

$$\begin{aligned} x &= \rho_n \cot\varphi \sin(\Delta\lambda \sin\varphi), \\ y &= 2\,\rho_n \cot\varphi \sin^2 \tfrac{1}{2}(\Delta\lambda \sin\varphi). \end{aligned} \qquad (10)$$

Numerical example.—Suppose $\varphi = 40^\circ$ and $\Delta\lambda = 25^\circ = 90000''$.

Then

$$\begin{aligned} \log 90000'' &= 4.9542425, \\ \log \sin 40^\circ &= 9.8080675 - 10, \\ \log 57850''.88 &= 4.7623100; \\ \Delta\lambda \sin\varphi &= 16^\circ\ 04'\ 10''.88, \\ \tfrac{1}{2}(\Delta\lambda \sin\varphi) &= 8^\circ\ 02'\ 05''.44. \end{aligned}$$

	log.		log.
$\sin(\Delta\lambda \sin\varphi)$	9.4421760 — 10	$\sin \frac{1}{2}(\Delta\lambda \sin\varphi)$	9.1454305 — 10
$\cot\varphi$	0.0761865	" "	9.1454305 — 10
ρ_n, Table II	7.3212956	$\cot\varphi$	0.0761865
		ρ_n, Table II	7.3212956
		2	0.3010300
x	6.8396581	y	5.9893731
	$x = 6912865$ feet	$y = 975828$ feet.	

The equations (10) are exact expressions for the co-ordinates. But when $\Delta\lambda$ is small, one may use the first terms in the expansions of $\sin(\Delta\lambda \sin\varphi)$ and $\sin^2 \frac{1}{2}(\Delta\lambda \sin\varphi)$ and reach results of a much simpler form.

Thus,

$$\begin{aligned} \sin(\Delta\lambda \sin\varphi) &= \Delta\lambda \sin\varphi - \tfrac{1}{6}(\Delta\lambda \sin\varphi)^3 + \ldots, \\ \sin^2 \tfrac{1}{2}(\Delta\varphi \sin\varphi) &= \tfrac{1}{4}(\Delta\lambda \sin\varphi)^2 - \tfrac{1}{48}(\Delta\lambda \sin\varphi)^4 + \ldots; \end{aligned}$$

whence, to terms of the second order,

$$\begin{aligned} x &= \rho_n\,\Delta\lambda \cos\varphi\,[1 - \tfrac{1}{6}(\Delta\lambda \sin\varphi)^2], \\ y &= \tfrac{1}{4}\rho_n (\Delta\lambda)^2 \sin 2\varphi\,[1 - \tfrac{1}{12}(\Delta\lambda \sin\varphi)^2]. \end{aligned} \qquad (11)$$

If the terms of the second order in these equations be neglected, the value of x will be too great by an amount somewhat less than $\frac{1}{6}(\Delta\lambda \sin\varphi)^2 . x$, and the value of y will be too great by an amount somewhat less than $\frac{1}{12}(\Delta\lambda \sin\varphi)^2 . y$. An idea of the magnitudes of these fractions of x and y may be gained from the following table, which gives the values of $\frac{1}{6}(\Delta\lambda \sin\varphi)^2$ for a few values of the arguments $\Delta\lambda$ and φ.

Values of $\frac{1}{6}(\Delta\lambda \sin\varphi)^2$.

$\Delta\lambda$.	φ		
	20°	40°	60°
°			
1	1/168000	1/47700	1/26260
2	1/42000	1/11900	1/6560
3	1/18700	1/5300	1/2920

It appears from this table that the first terms of (11) will suffice in computing the co-ordinates for projection of all maps on ordinary scales, and of less extent in longitude than 2° from the middle meridian. For example, the value of x for $\Delta\lambda = 2°$ and $\varphi = 40°$, and for a scale of two miles to one inch (1/126720), is 53.063 inches less 1/11900 part, or about 0.004 inch, which may properly be regarded as a vanishing quantity in map construction. For the computation of the co-ordinates given in the following tables, where $\Delta\lambda$ does not exceed 1°, it is amply sufficient, therefore, to use

$$\begin{aligned} x &= \rho_n \, \Delta\lambda \cos\varphi, \\ y &= \tfrac{1}{4}\rho_n (\Delta\lambda)^2 \sin 2\varphi. \end{aligned} \qquad (12)$$

In these formulas and in (11), if $\Delta\lambda$ is expressed in seconds, minutes, or degrees, it must be divided by the number of seconds, minutes, or degrees in the radius. The logarithms of the reciprocals of these numbers are given in equations (6) and (9) and also on the last page of this book. In the construction of tables like V to XI, it is most convenient, when English units are used, to express $\Delta\lambda$ in minutes and x and y in inches. For this purpose, supposing log ρ_n to be taken from Table II, if s be the scale of the map, or scale factor, equations (12) become—

Co-ordinates x and y in inches for scale s.

$$\begin{aligned} x &= \frac{12}{3437.747}\rho_n \, s \, \Delta\lambda \cos\varphi, \\ y &= \frac{3}{(3437.747)^2}\rho_n \, s \, (\Delta\lambda)^2 \sin 2\varphi, \\ &\Delta\lambda \text{ in minutes;} \\ \log(12/3437.747) &= 7.54291 - 10, \\ \log(3/(3437.747)^2) &= 3.4046 - 10. \end{aligned} \qquad (13)$$

Tables V–XI give the values of x and y for various scales and for the zone of the earth's surface lying between 25° and 50°.

Numerical example.—Suppose $\varphi = 40^\circ$ and $\Delta\lambda = 15'$; and let the scale of the map be one mile to the inch, or $s = 1/63360$. Then the calculation by (13) runs thus:

	log.		log.
cons't	7.54291 — 10	cons't	3.4046 — 10
ρ_n	7.32130	ρ_n	7.3213
s	5.19818 — 10	s	5.1982 — 10
15	1.17609	$(15)^2$	2.3522
$\cos\varphi$	9.88425 — 10	$\sin 2\varphi$	9.9934
x	1.12273	y	8.2697 — 10
	In.		In.
$x =$	13.266	$y =$	0.01861.

These values of x and y, it will be observed, agree with those corresponding to the same arguments in Table VIII, p. 45.

When many values for the same scale are to be computed log s should, of course, be combined with the constant logarithms of (13). Moreover, since in (13) x varies as $\Delta\lambda$ and y as $(\Delta\lambda)^2$, when several pairs of co-ordinates are to be computed for the same latitude, it will be most advantageous to compute the pair corresponding to the greatest common divisor of the several values of $\Delta\lambda$ and derive the other pairs by direct multiplication.

AREAS OF ZONES AND QUADRILATERALS OF THE EARTH'S SURFACE.

(6). An expression for the area of a zone of the earth's surface or of a quadrilateral bounded by meridians and parallels may be found in the following manner:

The area of an elementary zone dZ, whose middle latitude is φ and whose width is $\rho_m\, d\varphi$, is (see FIG. 1),

$$\begin{aligned} dZ &= 2\,\pi\, r\, \rho_m\, d\varphi \\ &= 2\,\pi\, \rho_m\, \rho_n \cos\varphi\, d\varphi. \end{aligned}$$

By means of the relations (1), this becomes

$$\begin{aligned} dZ &= 2\,\pi\, a^2 (1 - e^2) \frac{\cos\varphi\, d\varphi}{(1 - e^2 \sin^2 \varphi)^2} \\ &= 2\,\pi\, a^2 \frac{1 - e^2}{e} \, \frac{d\,(e \sin\varphi)}{(1 - e^2 \sin^2 \varphi)^2}. \end{aligned} \tag{14}$$

The integral of this between limits corresponding to φ_1 and φ_2, or the area of a zone bounded by parallels whose latitudes are φ_1 and φ_2 respectively, is

$$Z = \pi\, a^2 \frac{1 - e^2}{e} \left\{ \begin{array}{c} \dfrac{e \sin \varphi_2}{1 - e^2 \sin^2 \varphi_2} - \dfrac{e \sin \varphi_1}{1 - e^2 \sin^2 \varphi} \\ + \tfrac{1}{2} \text{ Nap. log } \dfrac{(1 + e \sin \varphi_2)(1 - e \sin \varphi_1)}{(1 - e \sin \varphi_2)(1 + e \sin \varphi_1)} \end{array} \right\}. \tag{15}$$

To get the area of the entire surface of the spheroid, make $\varphi_1 = -\frac{1}{2}\pi$ and $\varphi_2 = +\frac{1}{2}\pi$ in (15). The result is

$$\text{Surface of spheriod} = 2\pi a^2 \left[1 + \frac{1-e^2}{2e}\,\text{Nap. log}\left(\frac{1+e}{1-e}\right)\right]. \quad (16)$$

For numerical applications it is most advantageous to express (16) in a series of powers of e. Thus, by Maclaurin's theorem,

$$\text{Surface of spheroid} = 4\pi a^2\left(1 - \frac{e^2}{3} - \frac{e^4}{15} - \frac{e^6}{35} - \ldots\right). \quad (17)$$

For the calculation of areas of zones and quadrilaterals it is also most advantageous to expand (15) in a series of powers of $e \sin\varphi_1$ and $e \sin\varphi_2$ and express the result in terms of multiples of the half sum and half difference of φ_1 and φ_2. Thus, (15) readily assumes the form

$$Z = 2\pi a^2(1-e^2)\left[(\sin\varphi_2 - \sin\varphi_1) + \frac{2}{3}e^2(\sin^3\varphi_2 - \sin^3\varphi_1) + \ldots\right]$$

From this, by substitution and reduction, there results

$$Z = 2\pi\left\{\begin{array}{l} C_1\cos\varphi\sin\tfrac{1}{2}\Delta\varphi - C_2\cos 3\varphi\sin\tfrac{3}{2}\Delta\varphi \\ + C_3\cos 5\varphi\sin\tfrac{5}{2}\Delta\varphi - . \end{array}\right\}, \quad (18)$$

wherein

$$\begin{aligned} \varphi &= \tfrac{1}{2}(\varphi_2 + \varphi_1), \\ \Delta\varphi &= \varphi_2 - \varphi_1, \\ C_1 &= 2a^2\left(1 - \frac{e^2}{2} - \frac{e^4}{8} - \frac{e^6}{16} - \ldots\right), \\ C_2 &= 2a^2\left(\frac{e^2}{6} + \frac{e^4}{48} + 0 + \ldots\right), \qquad (19) \\ C_3 &= 2a^2\left(\frac{3e^4}{80} + \frac{e^6}{40} + \ldots\right). \end{aligned}$$

If Q be the area of a quadrilateral bounded by the parallels whose latitudes are φ_1 and φ_2 and by meridians whose difference of longitude is $\Delta\lambda$,

$$Q = \frac{\Delta\lambda}{2\pi}Z.$$

Hence, using the English mile as unit of length, (18) and (19) give for the adopted spheroid—

Area of quadrilateral in square miles.

$$Q = \Delta\lambda\ (\text{in degrees})\left\{\begin{array}{l} c_1\cos\varphi\sin\tfrac{1}{2}\Delta\varphi - c_2\cos 3\varphi\sin\tfrac{3}{2}\Delta\varphi \\ + c_3\cos 5\varphi\sin\tfrac{5}{2}\Delta\varphi - \ldots \end{array}\right\},$$

$$\begin{aligned} \log c_1{}^* &= 5.7375398, \qquad (20) \\ \log c_2 &= 2.79173, \\ \log c_3 &= 9.976 - 10. \end{aligned}$$

$\varphi = \frac{1}{2}(\varphi_2 + \varphi_1)$, $\Delta\varphi = \varphi_2 - \varphi_1$,

φ_1, φ_2 = latitudes of bounding parallels,

$\Delta\lambda$ = difference of longitude of bounding meridians.

---

[*] c_1, c_2, c_3 are obtained from C_1, C_2, C_3 respectively by dividing the latter by the number of degrees in the radius, viz: 57.29578.

Numerical examples.—1°. Suppose $\varphi_1 = 0$, $\varphi_2 = 90°$ and $\Delta\lambda = 360°$. Then (20) should give the area of a hemispheroid. The calculation runs thus:

	log.		log.		log.
c_1	5.7375398	c_2	2.79173	c_3	9.976 — 10
$\cos\varphi$	9.8494850 — 10	$\cos 3\varphi$	9.84948_n — 10	$\cos 5\varphi$	9.849_n — 10
$\sin\frac{1}{2}\Delta\varphi$	9.8494850 — 10	$\sin\frac{3}{2}\Delta\varphi$	9.84949 — 10	$\sin\frac{5}{2}\Delta\varphi$	9.848_n — 10
360	2.5563025	360	2.55630	360	2.556
Sum	7.9928123		5.04700_n		2.229

Hence—

$$\begin{aligned} \text{1st term} &= +\ 98358591 \\ \text{2d term} &= +\ \ \ \ 111429 \\ \text{3d term} &= +\ \ \ \ \ \ \ \ \ 169 \\ Q = \text{sum} &= \ \ \ \ 98470189 \end{aligned}$$

Twice this is the area of the spheroidal surface of the earth; *i. e.* 196940378 square miles.

2°. The last result may be checked by (17). Thus,

$$\begin{aligned} \left(\frac{e^2}{3} + \frac{e^4}{15} + \ldots\right) &= 0.00225928 \\ \log\left(1 - \frac{e^2}{3} - \ldots\right) &= 9.9990177 \\ \log a^2 &= 7.1961072 \\ \log 4\pi &= 1.0992099 \\ \log(196940407) &= 8.2943348. \end{aligned}$$

This number agrees with the number derived above as closely as 7-place logarithms will permit, the discrepancy between the two values being about $\frac{1}{6000000}$ part of the area. Hence, with a precision somewhat greater than the precision of the elements of the adopted spheroid warrants,

Area earth's surface = 196 940 400 square miles.

The areas of quadrilaterals of the earth's surface bounded by meridians and parallels of 1°, 30′, 15′, and 10′ extent respectively, in latitude and longitude, are given in Tables XII–XV.

B. EXPLANATION OF USE OF TABLES.

(7.) Table I gives the logarithms of the meridian radius of curvature of the earth for each minute of latitude from 21° to 51°. The unit of length is the English foot. The method of computing these logarithms is explained in section (2). Logarithms corresponding to arguments falling between the tabular arguments are derived by interpolation, this process being facilitated by the side tables of proportional parts. For example, log ρ_m for latitude 27° 39′ 42″ is found thus:

log ρ_m for 27° 39′	7.3186882	Tabular dif. 11.
tabular correction for 42″, or $\frac{42}{60} \times 11$,	+ 8	
log ρ_m for 27° 39′ 42″	7.3186890	

(8.) Table II gives the logarithms of the radius of curvature of the normal section. It is in all respects similar to Table I. Its derivation is explained in section (2).

(9.) Table III gives lengths of terrestrial arcs of meridians corresponding to latitude intervals of 10″, 20″ . . . 60″ and 10′, 20′ . . . 60′, or lengths corresponding to arcs less than one degree. The unit of length is the English foot. The derivation of this table is explained in section (3).

The length corresponding to any latitude interval is the distance along the meridian between parallels whose latitudes are less and greater respectively than the given latitude by half the interval. Thus, for example, the length corresponding to the interval 30′ and latitude 37° (182047.3 feet) is the distance along the meridian from latitude 36° 45′ to latitude 37° 15′.

By interpolation, we may get from this table the meridional distance corresponding to any interval falling between latitude 25° and latitude 50°. The following example will illustrate this use: Required the length of the meridional arc between latitude 41° 28′ 17″.8 and latitude 41° 39′ 53″.4. The difference of these latitudes is 11′ 35″.6 and their mean is 41° 34′ 05″.6. The computation runs thus:

	Latitude 41°.	Tabular difference.
10′	60724.60 feet	10.70 feet
1′	6072.46 "	1.07 "
30″	3036.23 "	.54 "
5″	506.04 "	.09 "
0″.6	60.72 "	.01 "
$\frac{34.09}{60} \times 12.41$	7.05 "	Sum, 12.41 feet.

Length = 70407.10 feet.

When the degree of precision required is as great as that in the example just given it will be more convenient to use formula (6). Thus, in this example—

	log.
$\Delta \varphi = 695''.6$	2.8423596
$\varphi = 41° 34' 05''.6$, ρ_m (Table 1)	7.3196820
	cons't 4.6855749
Length = 70407.10 feet	4.8476165

(10.) Table IV gives lengths of terrestrial arcs of parallels corresponding to longitude intervals of 10″, 20″, . . . 60″ and 10′, 20′, . . . 60′, or lengths corresponding to arcs less than one degree. Its derivation is explained in section (4). The unit is the English foot.

The method of using this table is similar to that applicable to Table III, explained above. For the precise computation of arcs along parallels intermediate to those of the table, direct application of formula (9) is less laborious than interpolation from the table.

(11.) Tables V to XI give the co-ordinates for the projection of maps according to the polyconic system explained in section (5) for the following scales respectively:

Scale $\frac{1}{250000}$,	Table V.
" $\frac{1}{126720}$,	" VI.
" $\frac{1}{125000}$,	" VII.
" $\frac{1}{63360}$,	" VIII.
" $\frac{1}{62500}$,	" IX.
" $\frac{1}{31680}$,	" X.
" $\frac{1}{30000}$,	" XI.

The unit of length is the English inch.

The use of these tables and their application in the graphical construction of maps may be best explained by an example. Suppose it is required

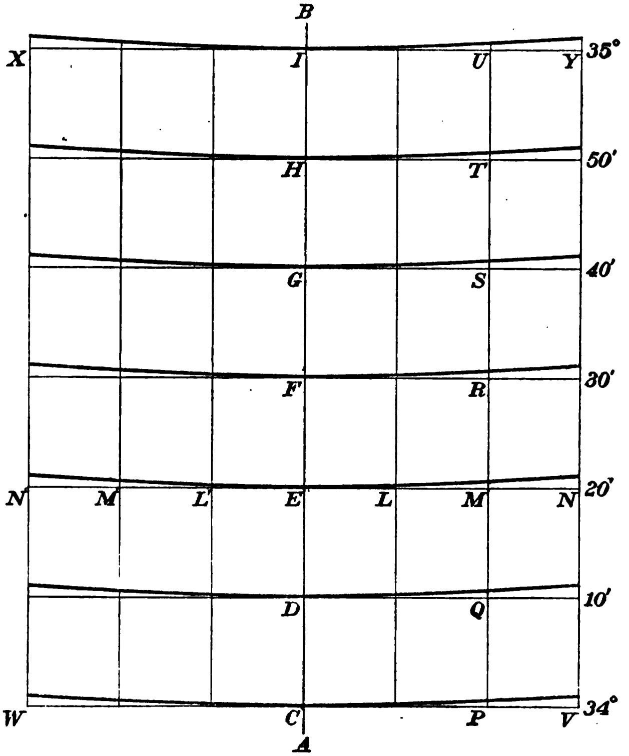

Fig. 4.

to draw meridians and parallels for a map of an area of 1° extent in longitude, lying between the parallels of 34° and 35°. Let the scale of the map be one mile to the inch, or 1 / 63360, and let the meridians and parallels be 10′ apart respectively. Draw on the projection paper an indefinite straight line A B, FIG. 4, to represent the middle meridian of the map. Take any convenient point, as C, on this line for the latitude 34°, and lay off from this point the meridional distances C D, C E, C F, . . . C I given in the second column of Table VIII, p. 44.* Through the points D, E, F, ... I thus found, draw indefinite straight lines perpendicular to A B. By means of these lines and the tabular co-ordinates, points on the developed parallels and meridians are readily found. Thus, for example, the abscissas for points ten minutes apart on the parallel 34° 20′ are 9.53, 19.06, and 28.59 inches. These distances are to be laid off on N N′ in both directions from A B. At the points L, M, N, L′, M′, N′, so determined, erect perpendiculars to N N′ equal in length, respectively, to the ordinates corresponding to the longitude intervals 10′, 20′, 30′. The curved line joining the extremities of these perpendiculars is the parallel required. It may be drawn by means of a flexible ruler. The other parallels are constructed in the same manner. They are all concave towards the north or south according as the map shows a portion of the northern or southern hemisphere. The meridians are drawn in a similar manner through the points (*e. g.*, P, Q, M, R, S, T, U in FIG. 4) having the same longitude relative to the middle meridian. All meridians are concave towards the middle meridian.

A test of the graphical work which should always be applied is the approximation to equality of corresponding diagonals in the various quadrilaterals formed. Thus in FIG. 4, V X should be equal to W Y, C N* to C N′, E V to E W, etc.†

(12.) Tables XII to XV give the areas in square miles of quadrilaterals of the earth's surface of 1°, 30′, 15′ and 10′ extent, respectively, in latitude and longitude. Their derivation is explained in section (6). The spheroid adopted in the computation of these tables is Clarke's (1866). See section (1). The arguments of the tables are the middle latitudes of the quadrilaterals. From the tabular values, by means of interpolation and summation, the area of any portion of the earth's surface bounded by meridians and parallels may be found.

(13.) Table XVI shows the actual intervals or distances in feet corresponding to 0.01 inch on maps of different scales. It is derived in the following manner:

---

*The meridional distances and the abscissas of the points on the developed parallels in *Fig.* 4 are one-twentieth of the true or tabular values. The ordinates of points on the developed parallels are the tabular values.

† It should be noted that C N is not equal to E V, N and V referring here to points on the developed parallels.

Let I be the actual linear interval corresponding to the interval i on a map whose scale is s. Then

$$I = \frac{i}{s}.$$

If in this we make $i = 0.01$ inch and express I in feet, there results

$$I \text{ in feet} = \frac{0.01 \text{ inch}}{12\, s}.$$

Making s successively $1 / 250000$, $1 / 126720$, etc., the values in the table are found.

TABLE I.—*Logarithms of meridian radius of curvature ρ_m in English feet.*

[Derivation of table explained in section (2); use of table explained on p. 20.]

Lat.	21°	22°	23°	24°	25°	26°	27°	28°	29°	30°
′	**7.318**	**7.318**	**7.318**	**7.318**	**7.318**	**7.318**	**7.318**	**7.318**	**7.318**	**7.318**
0	3045	3570	4115	4678	5259	5858	6474	7105	7751	8412
1	3053	3579	4124	4688	5269	5868	6484	7116	7762	8423
2	3062	3588	4133	4697	5279	5878	6494	7126	7773	8434
3	3070	3597	4142	4707	5289	5889	6505	7137	7784	8445
4	3079	3606	4152	4716	5299	5899	6515	7148	7795	8457
5	3088	3614	4161	4726	5309	5909	6526	7158	7806	8468
6	3096	3623	4170	4735	5319	5919	6536	7169	7817	8479
7	3105	3632	4179	4745	5328	5929	6546	7180	7828	8490
8	3113	3641	4189	4754	5338	5939	6557	7190	7839	8501
9	3122	3650	4198	4764	5348	5949	6567	7201	7850	8512
10	3131	3659	4207	4774	5358	5960	6578	7212	7860	8523
11	3139	3668	4216	4783	5368	5970	6588	7222	7871	8535
12	3148	3677	4226	4793	5378	5980	6599	7233	7882	8546
13	3157	3686	4235	4802	5388	5990	6609	7244	7893	8557
14	3165	3695	4244	4812	5398	6000	6620	7254	7904	8568
15	3174	3704	4254	4822	5408	6011	6630	7265	7915	8579
16	3183	3713	4263	4831	5417	6021	6640	7276	7926	8591
17	3191	3722	4272	4841	5427	6031	6651	7287	7937	8602
18	3200	3731	4282	4851	5437	6041	6661	7297	7948	8613
19	3209	3740	4291	4860	5447	6051	6672	7308	7959	8624
20	3217	3749	4300	4870	5457	6062	6682	7319	7970	8635
21	3226	3758	4310	4879	5467	6072	6693	7329	7981	8647
22	3235	3767	4319	4889	5477	6082	6703	7340	7992	8658
23	3244	3776	4328	4899	5487	6092	6714	7351	8003	8669
24	3252	3785	4338	4908	5497	6102	6724	7362	8014	8680
25	3261	3794	4347	4918	5507	6113	6735	7372	8025	8691
26	3270	3804	4356	4928	5517	6123	6745	7383	8036	8703
27	3278	3813	4366	4937	5527	6133	6756	7394	8047	8714
28	3287	3822	4375	4947	5537	6143	6766	7405	8058	8725
29	3296	3831	4384	4957	5547	6154	6777	7416	8069	8736
30	3305	3840	4394	4966	5557	6164	6787	7426	8080	8747
31	3313	3849	4403	4976	5567	6174	6798	7437	8091	8759
32	3322	3858	4413	4986	5577	6185	6808	7448	8102	8770
33	3331	3867	4422	4996	5587	6195	6819	7459	8113	8781
34	3340	3876	4431	5005	5597	6205	6829	7469	8124	8792
35	3349	3885	4441	5015	5607	6215	6840	7480	8135	8804
36	3357	3894	4450	5025	5617	6226	6851	7491	8146	8815
37	3366	3904	4460	5034	5627	6236	6861	7502	8157	8826
38	3375	3913	4469	5044	5637	6246	6872	7513	8168	8838
39	3384	3922	4479	5054	5647	6256	6882	7523	8179	8849
40	3393	3931	4488	5064	5657	6267	6893	7534	8190	8860
41	3401	3940	4498	5073	5667	6277	6903	7545	8201	8871
42	3410	3949	4507	5083	5677	6287	6914	7556	8212	8883
43	3419	3958	4516	5093	5687	6298	6924	7567	8223	8894
44	3428	3967	4526	5103	5697	6308	6935	7578	8234	8905
45	3437	3977	4535	5112	5707	6318	6946	7588	8246	8916
46	3446	3986	4545	5122	5717	6329	6956	7599	8257	8928
47	3454	3995	4554	5132	5727	6339	6967	7610	8268	8939
48	3463	4004	4564	5142	5737	6349	6977	7621	8279	8950
49	3472	4013	4573	5151	5747	6360	6988	7632	8290	8962
50	3481	4022	4583	5161	5757	6370	6999	7643	8301	8973
51	3490	4032	4592	5171	5767	6380	7009	7653	8312	8984
52	3499	4041	4602	5181	5777	6391	7020	7664	8323	8996
53	3508	4050	4611	5191	5787	6401	7030	7675	8334	9007
54	3516	4059	4621	5200	5798	6411	7041	7686	8345	9018
55	3525	4068	4630	5210	5808	6422	7052	7697	8356	9030
56	3534	4078	4640	5220	5818	6432	7062	7708	8368	9041
57	3543	4086	4649	5230	5828	6442	7073	7719	8379	9052
58	3552	4096	4659	5240	5838	6453	7084	7729	8390	9064
59	3561	4105	4668	5250	5848	6463	7094	7740	8401	9075
60	3570	4115	4678	5259	5858	6474	7105	7751	8412	9086

P. P.		
8	10	1.3
	20	2.6
	30	4.0
	40	5.3
	50	6.7
	60	8.0
9	10	1.5
	20	3.0
	30	4.5
	40	6.0
	50	7.5
	60	9.0
10	10	1.7
	20	3.3
	30	5.0
	40	6.7
	50	8.3
	60	10.0
11	10	1.8
	20	3.7
	30	5.5
	40	7.3
	50	9.2
	60	11.0
12	10	2.0
	20	4.0
	30	6.0
	40	8.0
	50	10.0
	60	12.0

TABLE I.—*Logarithms of meridian radius of curvature ρ_m in English feet.*

[Derivation of table explained in section (2) use of table explained on page 20.]

Lat.	31°	32°	33°	34°	35°	36°	37°	38°	39°	40°
	7.318	7.318	7.319	7.319	7.319	7.319	7.319	7.319	7.319	7.319
′ 0	9086	9773	0472	1182	1902	2631	3369	4114	4866	5623
1	9098	9785	0484	1194	1914	2643	3381	4126	4878	5636
2	9109	9796	0495	1206	1926	2656	3394	4139	4891	5649
3	9120	9807	0507	1218	1938	2668	3406	4151	4904	5661
4	9132	9819	0519	1230	1950	2680	3418	4164	4916	5674
5	9143	9831	0531	1241	1962	2692	3431	4176	4929	5687
6	9154	9843	0542	1253	1974	2705	3443	4189	4941	5699
7	9166	9854	0554	1265	1986	2717	3455	4201	4954	5712
8	9177	9866	0566	1277	1999	2729	3468	4214	4966	5725
9	9189	9877	0577	1289	2011	2741	3480	4226	4979	5737
10	9200	9889	0590	1301	2023	2753	3492	4239	4992	5750
11	9211	9900	0601	1313	2035	2766	3505	4251	5004	5763
12	9223	9912	0613	1325	2047	2778	3517	4264	5017	5775
13	9234	9924	0625	1337	2059	2790	3530	4276	5029	5788
14	9245	9935	0637	1349	2071	2803	3542	4289	5042	5801
15	9257	9947	0648	1361	2083	2815	3554	4301	5055	5813
16	9268	9958	0660	1373	2095	2827	3567	4314	5067	5826
17	9280	9970	0672	1385	2108	2839	3579	4326	5080	5839
18	9291	9982	0684	1397	2120	2852	3592	4339	5092	5851
19	9302	9993	0696	1409	2132	2864	3604	4351	5105	5864
20	9314	*0005	0707	1421	2144	2876	3616	4364	5118	5877
21	9325	*0016	0719	1433	2156	2888	3629	4376	5130	5890
22	9337	*0028	0731	1445	2168	2901	3641	4389	5143	5902
23	9348	*0040	0743	1457	2180	2913	3654	4401	5156	5915
24	9360	*0051	0755	1469	2192	2925	3666	4414	5168	5928
25	9371	*0063	0766	1481	2205	2938	3678	4426	5181	5940
26	9382	*0075	0778	1493	2217	2950	3691	4439	5193	5953
27	9393	*0086	0790	1505	2229	2962	3703	4451	5206	5966
28	9405	*0098	0802	1517	2241	2974	3716	4464	5219	5978
29	9417	*0110	0814	1529	2253	2987	3728	4477	5231	5991
30	9428	*0121	0826	1541	2265	2999	3741	4489	5244	6004
31	9440	*0133	0837	1553	2278	3011	3753	4502	5256	6017
32	9451	*0144	0849	1565	2290	3024	3765	4514	5269	6029
33	9463	*0156	0861	1577	2302	3036	3778	4527	5282	6042
34	9474	*0168	0873	1589	2314	3048	3790	4539	5294	6055
35	9485	*0179	0885	1601	2326	3060	3803	4552	5307	6067
36	9497	*0191	0897	1613	2338	3073	3815	4564	5320	6080
37	9508	*0203	0908	1625	2351	3085	3828	4577	5332	6093
38	9520	*0214	0920	1637	2363	3097	3840	4589	5345	6106
39	9531	*0226	0932	1649	2375	3110	3852	4602	5358	6118
40	9543	*0238	0944	1661	2387	3122	3865	4614	5370	6131
41	9554	*0249	0956	1673	2399	3134	3877	4627	5383	6144
42	9566	*0261	0968	1685	2411	3147	3890	4640	5395	6156
43	9577	*0273	0980	1697	2424	3159	3902	4652	5408	6169
44	9589	*0285	0992	1709	2436	3171	3915	4665	5421	6182
45	9600	*0296	1003	1721	2448	3184	3927	4677	5433	6195
46	9612	*0308	1015	1733	2460	3196	3939	4690	5446	6207
47	9623	*0320	1027	1745	2472	3208	3952	4702	5459	6220
48	9635	*0331	1039	1757	2485	3221	3964	4715	5471	6233
49	9646	*0343	1051	1769	2497	3233	3977	4727	5484	6245
50	9658	*0355	1063	1781	2509	3245	3989	4740	5497	6258
51	9669	*0366	1075	1793	2521	3258	4002	4753	5509	6271
52	9681	*0378	1087	1805	2533	3270	4014	4765	5522	6284
53	9692	*0390	1098	1817	2546	3282	4027	4778	5535	6296
54	9704	*0402	1110	1829	2558	3295	4039	4790	5547	6309
55	9715	*0413	1122	1841	2570	3307	4052	4803	5560	6322
56	9727	*0425	1134	1854	2582	3319	4064	4815	5573	6335
57	9739	*0437	1146	1866	2594	3332	4077	4828	5585	6347
58	9750	*0449	1158	1878	2607	3344	4089	4841	5598	6360
59	9762	*0460	1170	1890	2619	3356	4101	4853	5611	6373
60	9773	*0472	1182	1902	2631	3369	4114	4866	5623	6385

P. P.	11	12	13
10	1.8	2.0	2.2
20	3.7	4.0	4.3
30	5.5	6.0	6.5
40	7.3	8.0	8.7
50	9.2	10.0	10.8
60	11.0	12.0	13.0

TABLE I.—*Logarithms of meridian radius of curvature ρ_m in English feet.*

[Derivation of table explained in section (2) use of table explained on page 20.]

Lat.	41°	42°	43°	44°	45°	46°	47°	48°	49°	50°	P. P.	
′	**7.319**	**7.319**	**7.319**	**7.319**	**7.319**	**7.320**	**7.320**	**7.320**	**7.320**	**7.320**		
0	6385	7152	7921	8692	9464	*0236	1007	1776	2543	3306		
1	6398	7164	7933	8704	9476	0248	1020	1789	2556	3319		
2	6411	7177	7946	8717	9489	0261	1033	1802	2569	3331		
3	6424	7190	7959	8730	9502	0274	1045	1815	2581	3344		
4	6436	7203	7972	8743	9515	0287	1058	1827	2594	3357		
5	6449	7216	7985	8756	9528	0300	1071	1840	2607	3369		
6	6462	7228	7998	8769	9541	0313	1084	1853	2619	3382		
7	6475	7241	8010	8782	9554	0326	1097	1866	2632	3395		
8	6487	7254	8023	8794	9566	0338	1110	1879	2645	3407		
9	6500	7267	8036	8807	9579	0351	1122	1892	2658	3420		
10	6513	7280	8049	8820	9592	0364	1135	1904	2670	3433		
11	6526	7292	8062	8833	9605	0377	1148	1917	2683	3445	**12**	
12	6538	7305	8075	8846	9618	0390	1161	1930	2696	3458		
13	6551	7318	8087	8859	9631	0403	1174	1943	2709	3471	10	2.0
14	6564	7331	8100	8872	9644	0416	1187	1955	2721	3483	20	4.0
15	6577	7344	8113	8884	9657	0429	1199	1968	2734	3496	30	6.0
16	6589	7356	8126	8897	9669	0441	1212	1981	2747	3509	40	8.0
17	6602	7369	8139	8910	9682	0454	1225	1994	2760	3521	50	10.0
18	6615	7382	8152	8923	9695	0467	1238	2007	2772	3534	60	12.0
19	6628	7395	8165	8936	9708	0480	1251	2019	2785	3547		
20	6640	7408	8177	8949	9721	0493	1264	2032	2798	3559		
21	6653	7420	8190	8962	9734	0506	1276	2045	2811	3572		
22	6666	7433	8203	8975	9747	0519	1289	2058	2823	3585		
23	6679	7446	8216	8987	9760	0531	1302	2071	2836	3597		
24	6692	7459	8229	9000	9772	0544	1315	2083	2849	3610		
25	6704	7472	8242	9013	9785	0557	1328	2096	2861	3623		
26	6717	7485	8254	9026	9798	0570	1341	2109	2874	3635		
27	6730	7497	8267	9039	9811	0583	1353	2122	2887	3648		
28	6743	7510	8280	9052	9824	0596	1366	2134	2900	3661		
29	6755	7523	8293	9065	9837	0609	1379	2147	2912	3673		
30	6768	7536	8306	9077	9850	0621	1392	2160	2925	3686		
31	6781	7549	8319	9090	9862	0634	1405	2173	2938	3699	**13**	
32	6794	7561	8332	9103	9875	0647	1418	2186	2950	3711		
33	6806	7574	8344	9116	9888	0660	1430	2198	2963	3724		
34	6819	7587	8357	9129	9901	0673	1443	2211	2976	3736	10	2.2
35	6832	7600	8370	9142	9914	0686	1456	2224	2989	3749	20	4.3
36	6844	7613	8383	9155	9927	0699	1469	2237	3001	3762	30	6.5
37	6858	7626	8396	9168	9940	0711	1482	2249	3014	3774	40	8.7
38	6870	7638	8409	9180	9953	0724	1494	2262	3027	3787	50	10.8
39	6883	7651	8422	9193	9965	0737	1507	2275	3039	3800	60	13.0
40	6896	7664	8434	9206	9978	0750	1520	2288	3052	3812		
41	6909	7677	8447	9219	9991	0763	1533	2301	3065	3825		
42	6921	7690	8460	9232	*0004	0776	1546	2313	3078	3838		
43	6934	7702	8473	9245	*0017	0788	1559	2326	3090	3850		
44	6947	7715	8486	9258	*0030	0801	1571	2339	3103	3863		
45	6960	7728	8499	9270	*0043	0814	1584	2352	3116	3875		
46	6973	7741	8512	9283	*0055	0827	1597	2364	3128	3888		
47	6985	7754	8524	9296	*0068	0840	1610	2377	3141	3901		
48	6998	7767	8537	9309	*0081	0853	1623	2390	3154	3913		
49	7011	7779	8550	9322	*0094	0866	1635	2403	3166	3926		
50	7024	7792	8563	9335	*0107	0878	1648	2415	3179	3938		
51	7036	7805	8576	9348	*0120	0891	1661	2428	3192	3951		
52	7049	7818	8589	9361	*0133	0904	1674	2441	3205	3964		
53	7062	7831	8602	9373	*0146	0917	1687	2454	3217	3976		
54	7075	7844	8614	9386	*0158	0930	1699	2466	3230	3989		
55	7088	7856	8627	9399	*0171	0943	1712	2479	3243	4002		
56	7100	7869	8640	9412	*0184	0955	1725	2492	3255	4014		
57	7113	7882	8653	9425	*0197	0968	1738	2505	3268	4027		
58	7126	7895	8666	9438	*0210	0981	1751	2517	3281	4039		
59	7139	7908	8679	9451	*0223	0994	1763	2530	3293	4052		
60	7152	7921	8692	9464	*0236	1007	1776	2543	3306	4065		

TABLE II.—*Logarithms of radius of curvature of normal section ρ_n in English feet.*

[Derivation of table explained in section (2); use of table explained on page 21.]

Lat.	21°	22°	23°	24°	25°	26°	27°	28°	29°	30°
′	**7.320**	**7.320**	**7.320**	**7.320**	**7.320**	**7.320**	**7.320**	**7.321**	**7.321**	**7.321**
0	8763	8939	9120	9308	9502	9701	9907	0117	0332	0553
1	8766	8942	9123	9311	9505	9705	9910	0121	0336	0556
2	8769	8945	9126	9314	9508	9708	9913	0124	0340	0560
3	8772	8948	9129	9318	9512	9712	9917	0128	0343	0564
4	8775	8951	9132	9321	9515	9715	9920	0131	0347	0567
5	8778	8953	9136	9324	9518	9718	9924	0135	0351	0571
6	8780	8956	9139	9327	9521	9722	9927	0138	0354	0575
7	8784	8959	9142	9330	9525	9725	9931	0142	0358	0579
8	8786	8962	9145	9333	9528	9728	9934	0145	0361	0582
9	8789	8965	9148	9337	9531	9732	9938	0149	0365	0586
10	8792	8968	9151	9340	9535	9735	9941	0153	0369	0590
11	8795	8971	9154	9343	9538	9739	9945	0156	0372	0594
12	8798	8974	9157	9346	9541	9742	9948	0159	0376	0597
13	8800	8977	9160	9349	9545	9745	9952	0163	0380	0601
14	8804	8980	9163	9353	9548	9749	9955	0167	0383	0605
15	8807	8983	9167	9356	9551	9752	9959	0170	0387	0608
16	8810	8986	9170	9359	9554	9756	9962	0174	0391	0612
17	8812	8989	9173	9362	9558	9759	9966	0177	0394	0616
18	8815	8992	9176	9365	9561	9762	9969	0181	0398	0620
19	8818	8995	9179	9368	9564	9766	9973	0185	0402	0623
20	8821	8998	9182	9372	9568	9769	9976	0188	0405	0627
21	8824	9001	9185	9375	9571	9773	9980	0192	0409	0631
22	8827	9004	9188	9378	9574	9776	9983	0195	0413	0635
23	8830	9007	9191	9381	9578	9779	9987	0199	0416	0638
24	8833	9010	9195	9384	9581	9783	9990	0203	0420	0642
25	8836	9013	9198	9388	9584	9786	9994	0206	0424	0646
26	8839	9016	9201	9391	9588	9790	9997	0210	0427	0649
27	8841	9020	9204	9394	9591	9793	*0001	0213	0431	0653
28	8844	9023	9207	9398	9594	9796	*0004	0217	0435	0657
29	8847	9026	9210	9401	9598	9800	*0008	0220	0438	0661
30	8850	9029	9213	9404	9601	9803	*0011	0224	0442	0664
31	8853	9032	9216	9407	9604	9807	*0015	0228	0446	0668
32	8856	9035	9220	9411	9608	9810	*0018	0231	0449	0672
33	8859	9038	9223	9414	9611	9814	*0022	0235	0453	0676
34	8862	9041	9226	9417	9614	9817	*0025	0238	0457	0679
35	8865	9044	9229	9420	9618	9820	*0029	0242	0460	0683
36	8868	9047	9232	9424	9621	9824	*0032	0246	0464	0687
37	8871	9050	9235	9427	9624	9827	*0036	0249	0468	0691
38	8874	9053	9238	9430	9628	9831	*0039	0253	0471	0694
39	8877	9056	9242	9433	9631	9834	*0043	0256	0475	0698
40	8879	9059	9245	9437	9634	9838	*0046	0260	0479	0702
41	8882	9062	9248	9440	9638	9841	*0050	0264	0482	0706
42	8885	9065	9251	9443	9641	9844	*0053	0267	0486	0710
43	8888	9068	9254	9446	9644	9848	*0057	0271	0490	0713
44	8891	9071	9257	9450	9648	9851	*0060	0274	0493	0717
45	8894	9074	9260	9453	9651	9855	*0064	0278	0497	0721
46	8897	9077	9264	9456	9654	9858	*0067	0282	0501	0725
47	8900	9080	9267	9459	9658	9862	*0071	0285	0505	0728
48	8903	9083	9270	9463	9661	9865	*0074	0289	0508	0732
49	8906	9086	9273	9466	9664	9869	*0078	0293	0512	0736
50	8909	9089	9276	9469	9668	9872	*0082	0296	0516	0740
51	8912	9093	9279	9472	9671	9875	*0085	0300	0519	0743
52	8915	9096	9283	9476	9674	9879	*0089	0303	0523	0747
53	8918	9099	9286	9479	9678	9882	*0092	0307	0527	0751
54	8921	9102	9289	9482	9681	9886	*0096	0311	0530	0755
55	8924	9105	9292	9485	9685	9889	*0099	0314	0534	0759
56	8927	9108	9295	9489	9688	9893	*0103	0318	0538	0762
57	8930	9111	9298	9492	9691	9896	*0106	0322	0542	0766
58	8933	9114	9302	9495	9695	9900	*0110	0325	0545	0770
59	8936	9117	9305	9498	9698	9903	*0113	0329	0549	0774
60	8939	9120	9308	9502	9701	9907	*0117	0332	0553	0777

P. P.	
2	
10	.3
20	.7
30	1.0
40	1.3
50	1.7
60	2.0
3	
10	.5
20	1.0
30	1.5
40	2.0
50	2.5
60	3.0
4	
10	.7
20	1.3
30	2.0
40	2.7
50	3.3
60	4.0

Table II.—*Logarithms of radius of curvature of normal section ρ_n in English feet.*

[Derivation of table explained in section (2); use of table explained on page 21.]

Lat.	31°	32°	33°	34°	35°	36°	37°	38°	39°	40°
′	**7.321**	**7.321**	**7.321**	**7.321**	**7.321**	**7.321**	**7.321**	**7.321**	**7.321**	**7.321**
0	0777	1006	1239	1476	1716	1959	2205	2453	2704	2956
1	0781	1010	1243	1480	1720	1963	2209	2457	2708	2961
2	0785	1014	1247	1484	1724	1967	2213	2462	2712	2965
3	0789	1018	1251	1488	1728	1971	2217	2466	2716	2969
4	0793	1022	1255	1492	1732	1975	2221	2470	2721	2973
5	0796	1026	1259	1496	1736	1979	2226	2474	2725	2978
6	0800	1029	1263	1500	1740	1983	2230	2478	2729	2982
7	0804	1033	1267	1504	1744	1988	2234	2482	2733	2986
8	0808	1037	1271	1508	1748	1992	2238	2487	2737	2990
9	0811	1041	1275	1512	1752	1996	2242	2491	2742	2994
10	0815	1045	1279	1516	1756	2000	2246	2495	2746	2999
11	0819	1049	1282	1520	1760	2004	2250	2499	2750	3003
12	0823	1053	1286	1524	1764	2008	2254	2503	2754	3007
13	0827	1057	1290	1528	1768	2012	2259	2507	2758	3011
14	0830	1060	1294	1532	1772	2816	2263	2512	2763	3016
15	0834	1064	1298	1536	1776	2020	2267	2516	2767	3020
16	0838	1068	1302	1540	1780	2024	2271	2520	2771	3024
17	0842	1072	1306	1544	1784	2028	2275	2524	2775	3028
18	0846	1076	1310	1548	1789	2033	2279	2528	2779	3032
19	0849	1080	1314	1552	1793	2037	2283	2532	2784	3037
20	0853	1084	1318	1556	1797	2041	2287	2537	2788	3041
21	0857	1087	1322	1560	1801	2045	2292	2541	2792	3045
22	0861	1091	1326	1564	1805	2049	2296	2545	2796	3049
23	0865	1095	1330	1568	1809	2053	2300	2549	2800	3054
24	0869	1099	1334	1572	1813	2057	2304	2553	2805	3058
25	0872	1103	1337	1576	1817	2061	2308	2557	2809	3062
26	0876	1107	1341	1580	1821	2065	2312	2562	2813	3066
27	0880	1111	1345	1584	1825	2069	2316	2566	2817	3071
28	0884	1115	1349	1588	1829	2073	2321	2570	2822	3075
29	0888	1118	1353	1592	1833	2077	2325	2574	2826	3079
30	0891	1122	1357	1596	1837	2082	2329	2578	2830	3083
31	0895	1126	1361	1600	1841	2086	2333	2583	2834	3087
32	0899	1130	1365	1604	1845	2090	2337	2587	2838	3092
33	0903	1134	1369	1608	1849	2094	2341	2591	2843	3096
34	0907	1138	1373	1612	1853	2098	2345	2595	2847	3100
35	0910	1142	1377	1616	1857	2102	2350	2599	2851	3104
36	0914	1146	1381	1620	1861	2106	2354	2603	2855	3109
37	0918	1150	1385	1624	1865	2110	2358	2608	2859	3113
38	0922	1153	1389	1628	1870	2114	2362	2612	2864	3 17
39	0926	1157	1393	1632	1874	2119	2366	2616	2868	3121
40	0930	1161	1397	1636	1878	2123	2370	2620	2872	3126
41	0933	1165	1401	1640	1882	2127	2374	2624	2876	3130
42	0937	1169	1405	1644	1886	2131	2379	2629	2880	3134
43	0941	1173	1409	1648	1890	2135	2383	2633	2885	3138
44	0945	1177	1412	1652	1894	2139	2387	2637	2889	3143
45	0949	1181	1416	1656	1898	2143	2391	2641	2893	3147
46	0953	1185	1420	1660	1902	2147	2395	2645	2897	3151
47	0956	1189	1424	1664	1906	2151	2399	2649	2902	3155
48	0960	1192	1428	1668	1910	2156	2403	2654	2906	3160
49	0964	1196	1432	1672	1914	2160	2408	2658	2910	3164
50	0968	1200	1436	1676	1918	2164	2412	2662	2914	3168
51	0972	1204	1440	1680	1922	2168	2416	2666	2918	3172
52	0976	1208	1444	1684	1926	2172	2420	2670	2923	3177
53	0979	1212	1448	1688	1931	2176	2424	2675	2927	3181
54	0983	1216	1452	1692	1935	2180	2428	2679	2931	3185
55	0987	1220	1456	1696	1939	2184	2433	2683	2935	3189
56	0991	1224	1460	1700	1943	2188	2437	2687	2940	3193
57	0995	1228	1464	1704	1947	2193	2441	2691	2944	3198
58	0999	1231	1468	1708	1951	2197	2445	2696	2948	3202
59	1003	1235	1472	1712	1955	2201	2449	2700	2952	3206
60	1006	1239	1476	1716	1959	2205	2453	2704	2956	3210

P. P.	
3	
10	.5
20	1.0
30	1.5
40	2.0
50	2.5
60	3.0
4	
10	.7
20	1.3
30	2.0
40	2.7
50	3.3
60	4.0
5	
10	.8
20	1.7
30	2.5
40	3.3
50	4.2
60	5.0

TABLE II.—*Logarithms of radius of curvature of normal section ρ_n in English feet.*

[Derivation of table explained in section (2); use of table explained on page 21.]

Lat.	41°	42°	43°	44°	45°	46°	47°	48°	49°	50°	P. P.	
′	7.321	7.321	7.321	7.321	7.321	7.321	7.321	7.321	7.321	7.321		
0	3210	3466	3722	3979	4236	4494	4751	5007	5263	5517		
1	3215	3470	3726	3983	4241	4498	4755	5012	5267	5522		
2	3219	3474	3731	3988	4245	4502	4760	5016	5271	5526		
3	3223	3479	3735	3992	4249	4507	4764	5020	5276	5530		
4	3227	3483	3739	3996	4254	4511	4768	5024	5280	5534		
5	3232	3487	3744	4001	4258	4515	4772	5029	5284	5538		
6	3236	3491	3748	4005	4262	4520	4777	5033	5288	5543		
7	3240	3496	3752	4009	4267	4524	4781	5037	5293	5547		
8	3244	3500	3756	4013	4271	4528	4785	5042	5297	5551		
9	3249	3504	3761	4018	4275	4532	4789	5046	5301	5555		
10	3253	3508	3765	4022	4279	4537	4794	5050	5305	5560	4	
11	3257	3513	3769	4026	4284	4541	4798	5054	5310	5564		
12	3261	3517	3774	4031	4288	4545	4802	5059	5314	5568		
13	3266	3521	3778	4035	4292	4550	4807	5063	5318	5572	10	.7
14	3270	3526	8782	4039	4297	4554	4811	5067	5322	5576	20	1.3
15	3274	3530	3786	4043	4301	4558	4815	5071	5327	5581	30	2.0
16	3278	3534	8791	4048	4305	4562	4819	5076	5331	5585	40	2.7
17	3283	3538	3795	4052	4309	4567	4824	5080	5335	5589	50	3.3
18	3287	3543	3799	4056	4314	4571	4828	5084	5339	5593	60	4.0
19	3291	3547	3803	4061	4318	4575	4832	5088	5344	5598		
20	3295	3551	3808	4065	4322	4580	4837	5093	5348	5602		
21	3300	3555	3812	4069	4327	4584	4841	5097	5352	5606		
22	3304	3560	3816	4073	4331	4588	4845	5101	5356	5610		
23	3308	3564	3821	4078	4335	4592	4849	5105	5361	5614		
24	3312	3568	3825	4082	4339	4597	4854	5110	5365	5619		
25	3317	3573	3829	4086	4344	4601	4858	5114	5369	5623		
26	3321	3577	3833	4091	4348	4605	4862	5118	5373	5627		
27	3325	3581	3838	4095	4352	4610	4866	5123	5378	5631		
28	3329	3585	3842	4099	4357	4614	4871	5127	5382	5636		
29	3334	3590	3846	4104	4361	4618	4875	5131	5386	5640		
30	3338	3594	3851	4108	4365	4622	4879	5135	5390	5644	5	
31	3342	3598	3855	4112	4369	4627	4884	5140	5395	5648		
32	3347	3602	3859	4116	4374	4631	4888	5144	5399	5652		
33	3351	3607	3863	4121	4378	4635	4892	5148	5403	5657	10	.8
34	3355	3611	3868	4125	4382	4640	4896	5152	5407	5661	20	1.7
35	3359	8615	3872	4129	4387	4644	4901	5157	5412	5665	30	2.5
36	3364	3620	3876	4134	4391	4648	4905	5161	5416	5669	40	3.3
37	3368	3624	3881	4138	4395	4652	4909	5165	5420	5673	50	4.2
38	3372	3628	3885	4142	4399	4657	4913	5169	5424	5678	60	5.0
39	3376	3632	3889	4146	4404	4661	4918	5174	5428	5682		
40	3381	3637	8893	4151	4408	4665	4922	5178	5433	5686		
41	3385	3641	3898	4155	4412	4670	4926	5182	5437	5690		
42	3389	3645	3902	4159	4417	4674	4931	5186	5441	5694		
43	3393	3649	3906	4164	4421	4678	4935	5191	5445	5699		
44	3398	3654	3911	4168	4425	4682	4939	5195	5450	5703		
45	3402	3658	3915	4172	4430	4687	4943	5199	5454	5707		
46	3406	3662	3919	4176	4434	4691	4948	5203	5458	5711		
47	3410	3667	3923	4181	4438	4695	4952	5208	5462	5716		
48	3415	3671	3928	4185	4442	4700	4956	5212	5467	5720		
49	3419	3675	3932	4189	4447	4704	4960	5216	5471	5724		
50	3423	3679	3936	4194	4451	4708	4965	5220	5475	5728		
51	3427	3684	3941	4198	4455	4712	4969	5225	5479	5732		
52	3432	3688	3945	4202	4460	4717	4973	5229	5484	5737		
53	3436	3692	3949	4206	4464	4721	4978	5233	5488	5741		
54	3440	3697	3953	4211	4468	4725	4982	5237	5492	5745		
55	3445	3701	3958	4215	4472	4730	4986	5242	5496	5749		
56	3449	3705	3962	4219	4477	4734	4990	5246	5500	5753		
57	3453	3709	3966	4224	4481	4738	4995	5250	5505	5758		
58	3457	3714	3971	4228	4485	4742	4999	5254	5509	5762		
59	3462	3718	3975	4232	4490	4747	5003	5259	5513	5766		
60	3466	3722	3979	4236	4494	4751	5007	5263	5517	5770		

TABLE III.—*Lengths of Terrestrial Arcs of Meridian.*

[**Derivation** of table explained in section (3) use of table explained on page **21.**]

Latitude Interval.	Latitude 25°	Latitude 26°	Latitude 27°	Latitude 28°	Latitude 29°
″	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*
10	1009.49	1009.63	1009.77	1009.92	1010.07
20	2018.97	2019.25	2019.54	2019.83	2020.13
30	3028.46	3028.88	3029.31	3029.75	3030.20
40	4037.95	4038.51	4039.08	4039.67	4040.27
50	5047.44	5048.13	5048.85	5049.58	5050.33
60	6056.92	6057.76	6058.62	6059.50	6060.40
′					
10	60569.2	60577.6	60586.2	60595.0	60604.0
20	121138.5	121155.2	121172.3	121190.0	121208.0
30	181707.7	181732.7	181758.5	181785.0	181812.0
40	242276.9	242310.3	242344.7	242379.9	242416.0
50	302846.1	302887.9	302930.9	302974.9	303019.9
60	363415.4	363465.5	363517.1	363569.9	363623.9
	30°	31°	32°	33°	34°
″					
10	1010.22	1010.38	1010.54	1010.70	1010.86
20	2020.44	2020.75	2021.07	2021.40	2021.73
30	3030.66	3031.13	3031.61	3032.10	3032.59
40	4040.88	4041.51	4042.15	4042.80	4043.46
50	5051.10	5051.89	5052.68	5053.50	5054.32
60	6061.32	6062.26	6063.22	6064.20	6065.19
′					
10	60613.2	60622.6	60632.2	60642.0	60651.9
20	121226.4	121245.3	121264.4	121283.9	121303.8
30	181839.7	181867.9	181896.6	181925.9	181955.7
40	242452.9	242490.5	242528.8	242567.9	242607.6
50	303066.1	303113.2	303161.1	303209.9	303259.4
60	363679.3	363735.8	363793.3	363851.8	363911.3
	35°	36°	37°	38°	39°
″					
10	1011.03	1011.20	1011.37	1011.55	1011.72
20	2022.06	2022.40	2022.75	2023.09	2023.44
30	3033.10	3033.61	3034.12	3034.64	3035.17
40	4044.13	4044.81	4045.50	4046.19	4046.89
50	5055.16	5056.01	5056.87	5057.74	5058.61
60	6066.19	6067.21	6068.24	6069.29	6070.34
′					
10	60661.9	60672.1	60682.4	60692.9	60703.4
20	121323.9	121344.3	121364.9	121385.7	121406.7
30	181985.8	182016.4	182047.3	182078.6	182110.1
40	242647.8	242688.5	242729.7	242771.4	242813.4
50	303309.7	303360.6	303412.2	303464.3	303516.8
60	363971.7	364032.8	364094.6	364157.1	364220.2
	40°	41°	42°	43°	44°
″					
10	1011.90	1012.08	1012.25	1012.43	1012.61
20	2023.80	2024.15	2024.51	2024.87	2025.23
30	3035.70	3036.23	3036.77	3037.30	3037.84
40	4047.60	4048.31	4049.02	4049.74	4050.46
50	5059.50	5060.38	5061.28	5062.17	5063.07
60	6071.39	6072.46	6073.53	6074.61	6075.69
′					
10	60713.9	60724.6	60735.3	60746.1	60756.9
20	121427.9	121449.2	121470.6	121492.2	121513.7
30	182141.8	182173.8	182206.0	182238.2	182270.6
40	242855.8	242898.4	242941.3	242984.3	243027.4
50	303569.7	303623.0	303676.6	303730.4	303784.3
60	364283.7	364347.6	364411.9	364476.5	364541.2
	45°	46°	47°	48°	49°
″					
10	1012.79	1012.97	1013.15	1013.33	1013.51
20	2025.59	2025.95	2026.31	2026.67	2027.02
30	3038.38	3038.92	3039.46	3040.00	3040.54
40	4051.18	4051.90	4052.62	4053.34	4054.05
50	5063.97	5064.87	5065.77	5066.67	5067.56
60	6076.77	6077.85	6078.93	6080.00	6081.08
′					
10	60767.7	60778.5	60789.3	60800.0	60810.8
20	121535.3	121556.9	121578.5	121600.1	121621.5
30	182303.0	182335.4	182367.8	182400.1	182432.3
40	243070.6	243113.9	243157.0	243200.1	243243.0
50	303838.3	303892.4	303946.3	304000.1	304053.8
60	364606.0	364670.8	364735.5	364800.2	364864.5

TABLE IV.—*Lengths of Terrestrial Arcs of Parallel.*

[Derivation of table explained in section (4); use of table explained on page 21.]

Longitude Interval.	Latitude 25°	Latitude 26°	Latitude 27°	Latitude 28°	Latitude 29°
″	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*
10	920.03	912.44	904.58	896.44	888.03
20	1840.05	1824.88	1809.16	1792.88	1776.06
30	2760.08	2737.33	2713.74	2689.32	2664.09
40	3680.11	3649.77	3618.32	3585.76	3552.12
50	4600.14	4562.21	4522.89	4482.20	4440.15
60	5520.17	5474.65	5427.47	5378.64	5328.18
′					
10	55201.7	54746.5	54274.7	53786.4	53281.8
20	110403.3	109493.0	108549.5	107572.9	106563.5
30	165605.0	164239.5	162824.2	161359.3	159845.3
40	220806.6	218986.1	217099.0	215145.7	213127.1
50	276008.3	273732.6	271373.7	268932.2	266408.8
60	331209.9	328479.1	325648.4	322718.6	319690.6
	30°	31°	32°	33°	34°
″					
10	879.35	870.40	861.18	851.71	841.97
20	1758.70	1740.80	1722.37	1703.41	1683.94
30	2638.04	2611.20	2583.55	2555.12	2525.91
40	3517.39	3481.59	3444.74	3406.83	3367.88
50	4396.74	4351.99	4305.92	4258.53	4209.85
60	5276.09	5222.39	5167.10	5110.24	5051.82
′					
10	52760.9	52223.9	51671.0	51102.4	50518.2
20	105521.8	104447.8	103342.1	102204.8	101036.4
30	158282.6	156671.8	155013.1	153307.3	151554.6
40	211043.5	208895.7	206684.2	204409.7	202072.8
50	263804.4	261119.6	258355.2	255512.1	252591.0
60	316565.3	313343.5	310026.3	306614.5	303109.2
	35°	36°	37°	38°	39°
″					
10	831.98	821.73	811.23	800.48	789.49
20	1663.95	1643.46	1622.46	1600.97	1578.98
30	2495.93	2465.19	2433.69	2401.45	2368.48
40	3327.91	3286.91	3244.92	3201.93	3157.97
50	4159.88	4108.64	4056.15	4002.42	3947.46
60	4991.86	4930.37	4867.38	4802.90	4736.95
′					
10	49918.6	49303.7	48673.8	48029.0	47369.5
20	99837.2	98607.4	97347.6	96058.0	94739.1
30	149755.8	147911.2	146021.4	144087.0	142108.6
40	199674.3	197214.9	194695.2	192116.0	189478.2
50	249592.9	246518.6	243369.0	240145.0	236847.7
60	299511.5	295822.3	292042.8	288174.0	284217.2
	40°	41°	42°	43°	44°
″					
10	778.26	766.79	755.08	743.15	730.98
20	1556.52	1533.58	1510.17	1486.29	1461.96
30	2334.78	2300.37	2265.25	2229.44	2192.95
40	3113.04	3067.16	3020.33	2972.59	2923.93
50	3891.30	3833.94	3775.42	3715.73	3654.91
60	4669.56	4600.73	4530.50	4458.88	4385.89
′					
10	46695.6	46007.3	45305.0	44588.8	43858.9
20	93391.2	92014.7	90610.0	89177.6	87717.9
30	140086.7	138022.0	135915.0	133766.4	131576.8
40	186782.3	184029.3	181220.0	178355.2	175435.8
50	233477.9	230036.7	226525.0	222944.0	219294.7
60	280173.5	276044.0	271830.1	267532.8	263153.6
	45°	46°	47°	48°	49°
″					
10	718.59	705.99	693.16	680.12	666.87
20	1437.19	1411.97	1386.32	1360.24	1333.75
30	2155.78	2117.96	2079.48	2040.36	2000.62
40	2874.38	2823.94	2772.64	2720.49	2667.50
50	3592.97	3529.93	3465.80	3400.61	3334.37
60	4311.56	4235.91	4158.96	4080.73	4001.25
′					
10	43115.6	42359.1	41589.6	40807.3	40012.5
20	86231.3	84718.2	83179.2	81614.6	80024.9
30	129346.9	127077.3	124768.7	122421.9	120037.4
40	172462.5	169436.5	166358.3	163229.2	160049.9
50	215578.2	211795.6	207947.9	204036.4	200062.3
60	258693.8	254154.7	249537.5	244843.7	240074.8

TABLE V.—*Co-ordinates for projection of maps. Scale $\frac{1}{250000}$.*

[Derivation of table explained in section (5) use of table explained on page 22.]

Latitude of parallel.	Meridional distances from even degree parallels.	Co-ordinates of developed parallel for—							
		15′ longitude.		30′ longitude.		45′ longitude.		1° longitude.	
		x	y	x	y	x	y	x	y
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
25 00		3.974	.004	7.949	.015	11.923	.033	15.898	.059
15	4.361	3.966	.004	7.933	.015	11.899	.033	15.865	.059
30	8.722	3.958	.004	7.916	.015	11.874	.033	15.832	.059
45	13.083	3.950	.004	7.900	.015	11.850	.034	15.800	.060
26 00	17.444	3.942	.004	7.883	.015	11.825	.034	15.767	.060
15	4.362	3.933	.004	7.866	.015	11.800	.034	15.733	.061
30	8.723	3.925	.004	7.849	.015	11.774	.034	15.699	.061
45	13.085	3.916	.004	7.833	.015	11.749	.035	15.665	.061
27 00	17.446	3.908	.004	7.816	.015	11.723	.035	15.631	.062
15	4.362	3.899	.004	7.798	.016	11.697	.035	15.596	.062
30	8.724	3.890	.004	7.780	.016	11.671	.035	15.561	.063
45	13.087	3.881	.004	7.763	.016	11.644	.036	15.526	.063
28 00	17.449	3.873	.004	7.745	.016	11.618	.036	15.490	.064
15	4.363	3.863	.004	7.727	.016	11.591	.036	15.454	.064
30	8.726	3.854	.004	7.709	.016	11.563	.036	15.418	.064
45	13.088	3.845	.004	7.691	.016	11.536	.036	15.382	.065
29 00	17.451	3.836	.004	7.673	.016	11.509	.036	15.345	.065
15	4.363	3.827	.004	7.654	.016	11.481	.037	15.308	.065
30	8.727	3.817	.004	7.635	.016	11.453	.037	15.270	.066
45	13.091	3.808	.004	7.616	.016	11.425	.037	15.233	.066
30 00	17.454	3.799	.004	7.598	.017	11.396	.037	15.195	.066
15	4.364	3.789	.004	7.578	.017	11.367	.037	15.156	.067
30	8.728	3.779	.004	7.559	.017	11.338	.038	15.118	.067
45	13.092	3.770	.004	7.540	.017	11.309	.038	15.079	.067
31 00	17.457	3.760	.004	7.520	.017	11.280	.038	15.040	.068
15	4.365	3.750	.004	7.500	.017	11.250	.038	15.001	.068
30	8.730	3.740	.004	7.480	.017	11.221	.038	14.961	.068
45	13.095	3.730	.004	7.460	.017	11.191	.038	14.921	.068
32 00	17.460	3.720	.004	7.441	.017	11.161	.039	14.881	.069
15	4.366	3.710	.004	7.420	.017	11.130	.039	14.840	.069
30	8.731	3.700	.004	7.400	.017	11.100	.039	14.799	.069
45	13.097	3.690	.004	7.379	.017	11.069	.039	14.758	.070
33 00	17.462	3.679	.004	7.359	.017	11.038	.039	14.718	.070
15	4.366	3.669	.004	7.338	.018	11.007	.039	14.676	.070
30	8.733	3.658	.004	7.317	.018	10.975	.040	14.633	.070
45	13.099	3.648	.004	7.296	.018	10.943	.040	14.591	.071
34 00	17.465	3.637	.004	7.275	.018	10.912	.040	14.549	.071
15	4.367	3.626	.004	7.253	.018	10.879	.040	14.506	.071
30	8.734	3.616	.004	7.231	.018	10.847	.040	14.463	.071
45	13.101	3.605	.004	7.210	.018	10.815	.040	14.420	.072
35 00	17.468	3.594	.004	7.188	.018	10.782	.040	14.376	.072

TABLE V.—*Co-ordinates for projection of maps. Scale $\frac{1}{250000}$.*

[Derivation of table explained in section (5); use of table explained on p. 22.]

Latitude of parallel.	Meridional distances from even degree parallels.	Co-ordinates of developed parallel for—							
		15′ longitude.		30′ longitude.		45′ longitude.		1° longitude.	
		x	y	x	y	x	y	x	y
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
35 00		3.594	.004	7.188	.018	10.782	.040	14.376	.072
15	4.368	3.583	.004	7.166	.018	10.749	.041	14.332	.072
30	8.735	3.572	.004	7.144	.018	10.716	.041	14.288	.072
45	13.103	3.561	.005	7.122	.018	10.683	.041	14.244	.073
36 00	17.471	3.550	.005	7.100	.018	10.650	.041	14.200	.073
15	4.368	3.539	.005	7.077	.018	10.616	.041	14.154	.073
30	8.736	3.527	.005	7.054	.018	10.582	.041	14.109	.073
45	13.105	3.516	.005	7.032	.018	10.547	.041	14.063	.073
37 00	17.473	3.504	.005	7.009	.018	10.513	.041	14.018	.074
15	4.369	3.493	.005	6.986	.018	10.479	.041	13.972	.074
30	8.738	3.481	.005	6.963	.018	10.444	.042	13.925	.074
45	13.108	3.470	.005	6.939	.018	10.409	.042	13.879	.074
38 00	17.477	3.458	.005	6.916	.019	10.374	.042	13.832	.074
15	4.370	3.446	.005	6.892	.019	10.339	.042	13.785	.074
30	8 740	3.434	.005	6.869	.019	10.303	.042	13.737	.075
45	13.110	3.422	.005	6.845	.019	10.267	.042	13.690	.075
39 00	17.480	3.411	.005	6.821	.019	10.232	.042	13.642	.075
15	4.371	3.398	.005	6.797	.019	10.195	.042	13.594	.075
30	8.741	3.386	.005	6.773	.019	10.159	.042	13.545	.075
45	13.112	3.374	.005	6.748	.019	10.123	.042	13.497	.075
40 00	17.483	3.362	.005	6.724	.019	10.086	.042	13.448	.075
15	4.371	3.350	.005	6.699	.019	10.049	.042	13.399	.075
30	8.743	3.337	.005	6.675	.019	10.012	.043	13.349	.076
45	13.114	3.325	.005	6.650	.019	9.975	.043	13.300	.076
41 00	17.486	3.312	.005	6.625	.019	9.937	.043	13.250	.076
15	4.372	3.300	.005	6.600	.019	9.900	.043	13.200	.076
30	8.744	3.287	.005	6.575	.010	9.862	.043	13.149	.076
45	13.117	3.275	.005	6.549	.019	9.824	.043	13.098	.076
42 00	17.489	3.262	.005	6.524	.019	9.786	.043	13.048	.076
15	4.373	3.249	.005	6.498	.019	9.747	.043	12.996	.076
30	8.746	3.236	.005	6.472	.019	9.709	.043	12.945	.076
45	13.119	3.223	.005	6.447	.019	9.670	.043	12.893	.076
43 00	17.492	3.210	.005	6.421	.019	9.631	.043	12.842	.076
15	4.374	3.197	.005	6.394	.019	9.592	.043	12.789	.076
30	8.747	3.184	.005	6.368	.019	9.552	.043	12.736	.076
45	13.121	3.170	.005	6.342	.019	9.513	.043	12.684	.076
44 00	17.495	3.158	.005	6.316	.019	9.473	.043	12.631	.077
15	4.375	3.144	.005	6.289	.019	9.433	.043	12.578	.077
30	8.749	3.131	.005	6.262	.019	9.393	.043	12.524	.077
45	13.124	3.118	.005	6.235	.019	9.353	.043	12.471	.077
45 00	17.498	3.104	.005	6.209	.019	9.313	.043	12.417	.077

TABLE V.—*Co-ordinates for projection of maps. Scale* $\frac{1}{250000}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Meridional distances from even degree parallels.	Co-ordinates of developed parallel for—							
		15′ longitude.		30′ longitude.		45′ longitude.		1° longitude.	
		x	y	x	y	x	y	x	y
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
45 00	----------	3.104	.005	6.209	.019	9.313	.043	12.417	.077
15	4.375	3.091	.005	6.181	.019	9.272	.043	12.363	.077
30	8.751	3.077	.005	6.154	.019	9.231	.043	12.308	.077
45	13.126	3.063	.005	6.127	.019	9.190	.043	12.254	.077
46 00	17.501	3.050	.005	6.100	.019	9.150	.043	12.200	.077
15	4.376	3.036	.005	6.072	.019	9.108	.043	12.144	.077
30	8.752	3.022	.005	6.044	.019	9.067	.043	12.089	.077
45	13.128	3.008	.005	6.017	.019	9.025	.043	12.033	.077
47 00	17.504	2.994	.005	5.989	.019	8.983	.043	11.978	.076
15	4.377	2.980	.005	5.961	.019	8.941	.043	11.922	.076
30	8.754	2.966	.005	5.933	.019	8.899	.043	11.865	.076
45	13.131	2.952	.005	5.904	.019	8.857	.043	11.809	.076
48 00	17.508	2.938	.005	5.876	.019	8.814	.043	11.752	.076
15	4.378	2.924	.005	5.848	.019	8.771	.043	11.695	.076
30	8.755	2.909	.005	5.819	.019	8.728	.043	11.638	.076
45	13.133	2.895	.005	5.790	.019	8.686	.043	11.581	.076
49 00	17.511	2.881	.005	5.762	.019	8.643	.043	11.524	.076
15	4.378	2.866	.005	5.733	.019	8.599	.043	11.465	.076
30	8.757	2.852	.005	5.704	.019	8.555	.042	11.407	.076
45	13.135	2.837	.005	5.675	.019	8.512	.042	11.349	.076
50 00	17.514	2.823	.005	5.646	.019	8.468	.042	11.291	.076

TABLE VI.—*Co-ordinates for projection of maps. Scale* $\frac{1}{126720}$.

[Derivation of table explained in section (5). Use of table explained on page 22.]

Latitude of parallel.	Meridional distances from even degree parallels.	Co-ordinates of developed parallel for—							
		15′ longitude.		30′ longitude.		45′ longitude.		1° longitude.	
		x	y	x	y	x	y	x	y
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
25 00		7.841	.007	15.682	.029	23.523	.065	31.364	.116
15	8.604	7.825	.007	15.650	.029	23.475	.065	31.300	.117
30	17.207	7.809	.007	15.617	.029	23.426	.066	31.235	.117
45	25.811	7.793	.007	15.585	.030	23.378	.067	31.170	.118
26 00	34.415	7.776	.007	15.553	.030	23.329	.067	31.106	.119
15	8.605	7.760	.007	15.519	.030	23.279	.067	31.039	.120
30	17.210	7.743	.008	15.486	.030	23.229	.068	30.972	.121
45	25.814	7.726	.008	15.452	.030	23.179	.068	30.905	.121
27 00	34.419	7.709	.008	15.419	.031	23.128	.069	30.838	.122
15	8.606	7.692	.008	15.384	.031	23.076	.069	30.769	.123
30	17.212	7.675	.008	15.350	.031	23.024	.070	30.699	.124
45	25.818	7.657	.008	15.315	.031	22.972	.070	30.630	.124
28 00	34.424	7.640	.008	15.280	.031	22.920	.070	30.560	.125
15	8.607	7.622	.008	15.244	.031	22.866	.071	30.489	.126
30	17.215	7.604	.008	15.208	.032	22.813	.071	30.417	.127
45	25.822	7.586	.008	15.173	.032	22.759	.072	30.345	.127
29 00	34.430	7.568	.008	15.137	.032	22.705	.072	30.274	.128
15	8.609	7.550	.008	15.100	.032	22.650	.072	30.200	.129
30	17.217	7.531	.008	15.063	.032	22.594	.073	30.125	.130
45	25.826	7.513	.008	15.026	.033	22.539	.073	30.051	.130
30 00	34.435	7.494	.008	14.989	.033	22.483	.074	29.978	.131
15	8.610	7.475	.008	14.951	.033	22.426	.074	29.902	.131
30	17.220	7.456	.008	14.913	.033	22.369	.074	29.825	.132
45	25.830	7.437	.008	14.874	.033	22.312	.075	29.749	.133
31 00	34.440	7.418	.008	14.836	.033	22.254	.075	29.672	.133
15	8.611	7.398	.008	14.797	.033	22.195	.075	29.594	.134
30	17.223	7.379	.008	14.758	.034	22.137	.076	29.515	.135
45	25.834	7.359	.008	14.718	.034	22.078	.076	29.437	.135
32 00	34.446	7.340	.008	14.679	.034	22.019	.076	29.358	.136
15	8.613	7.319	.008	14.639	.034	21.958	.077	29.278	.136
30	17.225	7.299	.009	14.598	.034	21.898	.077	29.197	.137
45	25.838	7.279	.009	14.558	.034	21.837	.077	29.116	.137
33 00	34.451	7.259	.009	14.518	.034	21.777	.078	29.036	.138
15	8.614	7.238	.009	14.476	.035	21.714	.078	28.953	.138
30	17.228	7.217	.009	14.435	.035	21.652	.078	28.869	.139
45	25.842	7.197	.009	14.393	.035	21.590	.078	28.786	.139
34 00	34.456	7.176	.009	14.352	.035	21.527	.079	28.703	.140
15	8.615	7.154	.009	14.309	.035	21.464	.079	28.618	.141
30	17.231	7.133	.009	14.266	.035	21.400	.079	28.533	.141
45	25.846	7.112	.009	14.224	.035	21.336	.080	28.448	.142
35 00	34.462	7.091	.009	14.181	.035	21.272	.080	28.362	.142

TABLE VI.—*Co-ordinates for projection of maps. Scale* $\frac{1}{126720}$.

[Derivation of table explained in section (5) use of table explained on **page** 22.]

Latitude of parallel.	Meridional distances from even degree parallels.	Co-ordinates of developed parallel for—							
		15′ longitude.		30′ longitude.		45′ longitude.		1° longitude.	
		x	y	x	y	x	y	x	y
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
35 00		7.091	.009	14.181	.035	21.272	.080	28.362	.142
15	8.617	7.069	.009	14.138	.036	21.207	.080	28.275	.142
30	17.234	7.047	.009	14.094	.036	21.141	.080	28.188	.143
45	25.851	7.025	.009	14.050	.036	21.076	.080	28.101	.143
36 00	34.468	7.003	.009	14.007	.036	21.010	.081	28.014	.144
15	8.618	6.981	.009	13.962	.036	20.943	.081	27.924	.144
30	17.237	6.959	.009	13.917	.036	20.876	.081	27.835	.144
45	25.855	6.936	.009	13.873	.036	20.809	.081	27.745	.145
37 00	34.474	6.914	.009	13.828	.036	20.742	.082	27.655	.145
15	8.620	6.891	.009	13.782	.036	20.673	.082	27.564	.145
30	17.240	6.868	.009	13.736	.036	20.604	.082	27.472	.146
45	25.860	6.845	.009	13.690	.037	20.536	.082	27.381	.146
38 00	34.480	6.822	.009	13.645	.037	20.467	.082	27.289	.147
15	8.621	6.799	.009	13.598	.037	20.397	.083	27.196	.147
30	17.243	6.775	.009	13.551	.037	20.326	.083	27.102	.147
45	25.864	6.752	.009	13.504	.037	20.256	.083	27.008	.147
39 00	34.485	6.729	.009	13.457	.037	20.186	.083	26.914	.148
15	8.623	6.705	.009	13.409	.037	20.114	.083	26.819	.148
30	17.246	6.681	.009	13.361	.037	20.042	.083	26.723	.148
45	25.868	6.657	.009	13.314	.037	19.970	.084	26.627	.148
40 00	34.491	6.633	.009	13.266	.037	19.899	.084	26.532	.149
15	8.624	6.608	.009	13.217	.037	19.825	.884	26.434	.149
30	17.249	6.584	.009	13.168	.037	19.752	.084	26.336	.149
45	25.873	6.560	.009	13.119	.037	19.679	.084	26.238	.149
41 00	34.497	6.535	.009	13.070	.037	19.605	.084	26.140	.150
15	8.625	6.510	.009	13.020	.037	19.530	.084	26.041	.150
30	17.250	6.485	.009	12.970	.037	19.456	.084	25.941	.150
45	25.875	6.460	.009	12.920	.037	19.381	.084	25.841	.150
42 00	34.500	6.435	.009	12.871	.037	19.306	.085	25.741	.150
15	8.627	6.410	.009	12.820	.037	19.230	.085	25.640	.150
30	17.255	6.385	.009	12.769	.038	19.154	.085	25.538	.151
45	25.882	6.359	.009	12.718	.038	19.077	.085	25.436	.151
43 00	34.510	6.334	.009	12.667	.038	19.001	.085	25.335	.151
15	8.629	6.308	.009	12.615	.038	18.923	.085	25.231	.151
30	17.257	6.282	.009	12.563	.038	18.845	.085	25.127	.151
45	25.886	6.256	.009	12.512	.038	18.767	.085	25.023	.151
44 00	34.515	6.230	.009	12.460	.038	18.689	.085	24.919	.151
15	8.630	6.203	.009	12.407	.038	18.610	.085	24.814	.151
30	17.261	6.177	.009	12.354	.038	18.531	.085	24.708	.151
45	25.891	6.151	.009	12.301	.038	18.452	.085	24.603	.151
45 00	34.522	6.124	.009	12.249	.038	18.373	.085	24.497	.151

TABLE VI.—*Co-ordinates for projection of maps. Scale* $\frac{1}{126720}$.

[Derivation of table explained in section 5; use of table explained on page 22.]

Latitude of parallel.		Meridional distances from even degree parallels.	Co-ordinates of developed parallel for—							
			15′ longitude.		30′ longitude.		45′ longitude.		1° longitude.	
			x	y	x	y	x	y	x	y
°	′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
45	00	——	6.124	.009	12.249	.038	18.373	.085	24.497	.151
	15	8.632	6.097	.009	12.195	.038	18.292	.085	24.390	.151
	30	17.264	6.071	.009	12.141	.038	18.212	.085	24.283	.151
	45	25.896	6.044	.009	12.088	.038	18.131	.085	24.175	.151
46	00	34.528	6.017	.009	12.034	.038	18.051	.085	24.068	.151
	15	8.633	5.990	.009	11.979	.038	17.969	.085	23.960	.151
	30	17.267	5.962	.009	11.925	.038	17.887	.085	23.849	.151
	45	25.901	5.935	.009	11.870	.038	17.805	.085	23.740	.151
47	00	34.534	5.908	.009	11.815	.038	17.723	.085	23.631	.151
	15	8.635	5.880	.009	11.760	.038	17.640	.085	23.520	.151
	30	17.270	5.852	.009	11.704	.038	17.556	.085	23.408	.151
	45	25.905	5.824	.009	11.648	.038	17.473	.085	23.297	.151
48	00	34.540	5.796	.009	11.593	.038	17.389	.085	23.186	.150
	15	8.637	5.768	.009	11.536	.038	17.305	.085	23.073	.150
	30	17.273	5.740	.009	11.480	.038	17.220	.084	22.960	.150
	45	25.910	5.712	.009	11.424	.037	17.135	.084	22.847	.150
49	00	34.546	5.684	.009	11.367	.037	17.051	.084	22.734	.150
	15	8.638	5.655	.009	11.310	.037	16.965	.084	22.620	.150
	30	17.276	5.626	.009	11.253	.037	16.879	.084	22.505	.150
	45	25.914	5.598	.009	11.195	.037	16.793	.084	22.391	.150
50	00	34.552	5.569	.009	11.138	.037	16.707	.084	22.276	.150

TABLE VII.—*Co-ordinates for projection of maps. Scale* $\frac{1}{125000}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.		Meridional distances from even degree parallels.	Abscissas of developed parallel.					
			5′ longitude.	10′ longitude.	15′ longitude.	20′ longitude.	25′ longitude.	30′ longitude.
°	′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
25	00	----------	2.650	5.299	7.949	10.599	13.249	15.898
	10	5.815	2.646	5.292	7.938	10.584	13.231	15.877
	20	11.629	2.642	5.285	7.927	10.570	13.212	15.854
	30	17.444	2.639	5.278	7.916	10.555	13.194	15.833
	40	23.259	2.635	5.270	7.905	10.540	13.176	15.811
	50	29.074	2.631	5.263	7.894	10.526	13.157	15.788
26	00	----------	2.628	5.256	7.883	10.511	13.139	15.767
	10	5.816	2.624	5.248	7.872	10.496	13.120	15.744
	20	11.631	2.620	5.240	7.861	10.481	13.101	15.721
	30	17.446	2.616	5.233	7.849	10.466	13.082	15.698
	40	23.262	2.613	5.225	7.838	10.451	13.063	15.676
	50	29.077	2.609	5.218	7.827	10.436	13.045	15.654
27	00	----------	2.605	5.210	7.816	10.421	13.026	15.631
	10	5.816	2.601	5.203	7.804	10.405	13.006	15.608
	20	11.633	2.597	5.195	7.792	10.390	12.987	15.584
	30	17.449	2.593	5.187	7.780	10.374	12.967	15.560
	40	23.265	2.589	5.179	7.768	10.358	12.947	15.537
	50	29.082	2.586	5.171	7.757	10.342	12.928	15.514
28	00	----------	2.582	5.163	7.745	10.327	12.909	15.490
	10	5.817	2.578	5.155	7.733	10.311	12.889	15.466
	20	11.634	2.574	5.147	7.721	10.294	12.868	15.442
	30	17.451	2.570	5.139	7.709	10.278	12.848	15.418
	40	23.268	2.566	5.131	7.697	10.262	12.828	15.394
	50	29.086	2.562	5.123	7.685	10.246	12.808	15.369
29	00	----------	2.558	5.115	7.673	10.230	12.788	15.345
	10	5.818	2.553	5.107	7.660	10.213	12.767	15.320
	20	11.636	2.549	5.098	7.648	10.197	12.746	15.295
	30	17.454	2.545	5.090	7.635	10.180	12.725	15.270
	40	23.272	2.541	5.082	7.622	10.163	12.704	15.245
	50	29.090	2.537	5.073	7.610	10.146	12.683	15.220
30	00	----------	2.533	5.065	7.598	10.130	12.662	15.195
	10	5.819	2.528	5.056	7.585	10.113	12.641	15.169
	20	11.638	2.524	5.048	7.572	10.096	12.620	15.143
	30	17.457	2.520	5.039	7.559	10.078	12.598	15.118
	40	23.276	2.515	5.031	7.546	10.061	12.577	15.092
	50	29.094	2.511	5.022	7.533	10.044	12.555	15.066
31	00	----------	2.507	5.014	7.520	10.027	12.534	15.040

Ordinates of developed parallel.		
Longitude interval.	25°	26°
′	*Inches.*	*Inches.*
5	0.001	0.001
10	.003	.003
15	.007	.008
20	.013	.013
25	.020	.021
30	.029	.030
	27°	28°
5	0.001	0.001
10	.003	.004
15	.008	.008
20	.014	.014
25	.022	.022
30	.031	.032
Longitude interval.	28°	29°
′	*Inches.*	*Inches.*
5	0.001	0.001
10	.004	.004
15	.008	.008
20	.014	.014
25	.022	.023
30	.032	.032
	30°	31°
5	0.001	0.001
10	.004	.004
15	.008	.008
20	.015	.015
25	.023	.023
30	.033	.034

TABLE VII.—*Co-ordinates for projection of maps. Scale* $\frac{1}{125000}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.		Meridional distances from even degree parallels.	Abscissas of developed parallel.					
			5′ longitude.	10′ longitude.	15′ longitude.	20′ longitude.	25′ longitude.	30′ longitude.
°	′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
31	00	----------	2.507	5.014	7.520	10.027	12.534	15.040
	10	5.820	2.502	5.005	7.507	10.009	12.512	15.014
	20	11.640	2.498	4.996	7.494	9.992	12.490	14.987
	30	17.460	2.493	4.987	7.480	9.974	12.467	14.960
	40	23.280	2.489	4.978	7.467	9.956	12.445	14.934
	50	29.100	2.485	4.969	7.454	9.938	12.423	14.908
32	00	----------	2.480	4.960	7.441	9.921	12.401	14.881
	10	5.821	2.476	4.951	7.427	9.903	12.379	14.854
	20	11.642	2.471	4.942	7.413	9.884	12.355	14.827
	30	17.462	2.467	4.933	7.400	9.866	12.333	14.800
	40	23.283	2.462	4.924	7.386	9.848	12.310	14.772
	50	29.104	2.458	4.915	7.373	9.830	12.288	14.745
33	00	----------	2.453	4.906	7.359	9.812	12.265	14.717
	10	5.822	2.448	4.896	7.345	9.793	12.241	14.689
	20	11.643	2.444	4.887	7.331	9.774	12.218	14.661
	30	17.465	2.439	4.878	7.316	9.755	12.194	14.633
	40	23.287	2.434	4.868	7.302	9.736	12.171	14.605
	50	29.109	2.429	4.859	7.288	9.718	12.147	14.576
34	00	----------	2.425	4.850	7.274	9.699	12.124	14.549
	10	5.823	2.420	4.840	7.260	9.680	12.100	14.520
	20	11.645	2.415	4.830	7.246	9.661	12.076	14.491
	30	17.468	2.410	4.821	7.231	9.642	12.052	14.462
	40	23.291	2.406	4.811	7.217	9.622	12.028	14.434
	50	29.113	2.401	4.802	7.203	9.604	12.004	14.405
35	00	----------	2.396	4.792	7.188	9.584	11.980	14.376
	10	5.824	2.391	4.782	7.174	9.565	11.956	14.347
	20	11.647	2.386	4.773	7.159	9.545	11.932	14.318
	30	17.471	2.381	4.763	7.144	9.526	11.907	14.288
	40	23.294	2.377	4.753	7.130	9.506	11.883	14.259
	50	29.118	2.372	4.743	7.115	9.486	11.858	14.230
36	00	----------	2.367	4.733	7.099	9.466	11.833	14.200
	10	5.824	2.362	4.723	7.085	9.446	11.808	14.170
	20	11.649	2.357	4.713	7.070	9.426	11.783	14.139
	30	17.473	2.351	4.703	7.055	9.406	11.757	14.109
	40	23.297	2.346	4.693	7.039	9.386	11.732	14.078
	50	29.122	2.341	4.683	7.024	9.366	11.707	14.048
37	00	----------	2.336	4.673	7.009	9.345	11.682	14.018

Ordinates of developed parallel.		
Longitude interval.	31°	32°
′	*Inches.*	*Inches.*
5	0.001	0.001
10	.004	.004
15	.008	.009
20	.015	.015
25	.023	.024
30	.034	.034
	33°	34°
5	0.001	0.001
10	.004	.004
15	.009	.009
20	.016	.016
25	.024	.025
30	.035	.036
Longitude interval.	34°	35°
′	*Inches.*	*Inches.*
5	0.001	0.001
10	.004	.004
15	.009	.009
20	.016	.016
25	.025	.025
30	.036	.036
	36°	37°
5	0.001	0.001
10	.004	.004
15	.009	.009
20	.016	.016
25	.025	.026
30	.036	.037

TABLE VII.—*Co-ordinates for projection of maps. Scale* $\frac{1}{125000}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.		Meridional distances from even degree parallels.	Abscissas of developed parallel.					
			5′ longitude.	10′ longitude.	15′ longitude.	20′ longitude.	25′ longitude.	30′ longitude.
°	′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
37	00	----------	2.336	4.673	7.009	9.345	11.682	14.018
	10	5.826	2.331	4.662	6.994	9.325	11.656	13.987
	20	11.651	2.326	4.652	6.978	9.304	11.630	13.956
	30	17.477	2.321	4.642	6.963	9.284	11.605	13.925
	40	23.302	2.316	4.631	6.947	9.263	11.579	13.894
	50	29.128	2.311	4.621	6.932	9.242	11.553	13.864
38	00	----------	2.305	4.611	6.916	9.222	11.527	13.832
	10	5.827	2.300	4.600	6.900	9.200	11.501	13.801
	20	11.653	2.295	4.590	6.884	9.179	11.474	13.769
	30	17.480	2.290	4.579	6.869	9.158	11.448	13.737
	40	23.306	2.284	4.568	6.853	9.137	11.421	13.705
	50	29.133	2.279	4.558	6.837	9.116	11.395	13.673
39	00	----------	2.274	4.548	6.821	9.095	11.369	13.642
	10	5.828	2.268	4.537	6.805	9.073	11.342	13.610
	20	11.655	2.263	4.526	6.789	9.052	11.315	13.577
	30	17.483	2.258	4.515	6.773	9.030	11.288	13.545
	40	23.310	2.252	4.504	6.756	9.008	11.261	13.513
	50	29.138	2.247	4.493	6.740	8.987	11.234	13.480
40	00	----------	2.241	4.483	6.724	8.965	11.207	13.448
	10	5.829	2.236	4.472	6.707	8.943	11.179	13.415
	20	11.657	2.230	4.461	6.691	8.921	11.152	13.382
	30	17.486	2.225	4.450	6.674	8.899	11.124	13.349
	40	23.314	2.219	4.439	6.658	8.877	11.097	13.316
	50	29.143	2.214	4.428	6.641	8.855	11.069	13.283
41	00	----------	2.208	4.417	6.625	8.834	11.042	13.250
	10	5.830	2.203	4.406	6.608	8.811	11.014	13.217
	20	11.659	2.197	4.394	6.591	8.788	10.985	13.183
	30	17.489	2.192	4.383	6.575	8.766	10.958	13.149
	40	23.319	2.186	4.372	6.558	8.744	10.929	13.115
	50	29.149	2.180	4.360	6.541	8.721	10.901	13.081
42	00	----------	2.175	4.349	6.524	8.698	10.873	13.048
	10	5.831	2.169	4.338	6.507	8.676	10.844	13.013
	20	11.661	2.163	4.326	6.490	8.653	10.816	12.979
	30	17.492	2.157	4.315	6.472	8.630	10.787	12.945
	40	23.323	2.152	4.303	6.455	8.607	10.759	12.910
	50	29.154	2.146	4.292	6.438	8.584	10.730	12.876
43	00	----------	2.140	4.281	6.421	8.561	10.702	12.842

Ordinates of developed parallel.		
Longitude interval.	37°	38°
′	*Inches.*	*Inches.*
5	0.001	0.001
10	.004	.004
15	.009	.009
20	.016	.017
25	.026	.026
30	.037	.037
	39°	40°
5	0.001	0.001
10	.004	.004
15	.009	.009
20	.017	.017
25	.026	.026
30	.037	.038
Longitude interval.	40°	41°
′	*Inches.*	*Inches.*
5	0.001	0.001
10	.004	.004
15	.009	.009
20	.017	.017
25	.026	.026
30	.038	.038
	42°	43°
5	0.001	0.001
10	.004	.004
15	.010	.010
20	.017	.017
25	.026	.027
30	.038	.038

TABLE VII.—*Co-ordinates for projection of maps. Scale $\frac{1}{125000}$.*

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.		Meridional distances from even degree parallels.	Abscissas of developed parallel.					
			5′ longitude.	10′ longitude.	15′ longitude.	20′ longitude.	25′ longitude.	30′ longitude.
°	′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
43	00	----------	2.140	4.281	6.421	8.561	10.701	12.842
	10	5.832	2.135	4.269	6.403	8.538	10.672	12.807
	20	11.663	2.129	4.257	6.386	8.514	10.643	12.772
	30	17.495	2.123	4.246	6.368	8.491	10.614	12.737
	40	23.327	2.117	4.234	6.351	8.468	10.585	12.701
	50	29.159	2.111	4.222	6.333	8.444	10.556	12.667
44	00	----------	2.105	4.210	6.316	8.421	10.526	12.631
	10	5.833	2.099	4.199	6.298	8.397	10.496	12.596
	20	11.666	2.093	4.187	6.280	8.373	10.467	12.560
	30	17.498	2.087	4.175	6.262	8.350	10.437	12.524
	40	23.331	2.081	4.163	6.244	8.326	10.407	12.489
	50	29.164	2.076	4.151	6.227	8.302	10.378	12.453
45	00	----------	2.070	4.139	6.209	8.278	10.348	12.417
	10	5.834	2.064	4.127	6.191	8.254	10.317	12.381
	20	11.668	2.057	4.115	6.172	8.230	10.288	12.345
	30	17.501	2.051	4.103	6.154	8.206	10.257	12.308
	40	23.335	2.045	4.091	6.136	8.181	10.226	12.272
	50	29.169	2.039	4.079	6.118	8.157	10.197	12.236
46	00	----------	2.033	4.067	6.100	8.133	10.166	12.199
	10	5.835	2.027	4.054	6.081	8.108	10.136	12.163
	20	11.670	2.021	4.042	6.063	8.084	10.104	12.125
	30	17.504	2.015	4.030	6.044	8.059	10.074	12.089
	40	23.339	2.009	4.017	6.026	8.034	10.043	12.052
	50	29.174	2.003	4.005	6.008	8.010	10.013	12.015
47	00	----------	1.996	3.992	5.989	7.985	9.981	11.978
	10	5.836	1.990	3.980	5.970	7.960	9.951	11.941
	20	11.672	1.984	3.968	5.951	7.935	9.919	11.903
	30	17.508	1.978	3.955	5.933	7.910	9.888	11.866
	40	23.344	1.971	3.943	5.914	7.885	9.857	11.828
	50	29.180	1.965	3.930	5.895	7.860	9.826	11.791
48	00	----------	1.959	3.917	5.876	7.835	9.794	11.752
	10	5.837	1.952	3.905	5.857	7.810	9.762	11.714
	20	11.674	1.946	3.892	5.838	7.784	9.730	11.677
	30	17.511	1.940	3.879	5.819	7.759	9.699	11.638
	40	23.348	1.933	3.867	5.800	7.733	9.667	11.600
	50	29.185	1.927	3.854	5.781	7.708	9.635	11.562
49	00	----------	1.921	3.841	5.762	7.682	9.603	11.523
	10	5.838	1.914	3.828	5.743	7.657	9.571	11.485
	20	11.676	1.908	3.815	5.723	7.631	9.539	11.446
	30	17.514	1.901	3.803	5.704	7.605	9.507	11.408
	40	23.352	1.895	3.790	5.684	7.579	9.474	11.369
	50	29.190	1.888	3.777	5.665	7.553	9.442	11.330
50	00	----------	1.882	3.764	5.646	7.527	9.409	11.291

Ordinates of developed parallel.		
Longitude interval.	43°	44°
′	*Inches.*	*Inches.*
5	0.001	0.001
10	.004	.004
15	.010	.010
20	.017	.017
25	.027	.027
30	.038	.038
	45°	46°
′	*Inches.*	*Inches.*
5	0.001	0.001
10	.004	.004
15	.010	.010
20	.017	.017
25	.027	.027
30	.038	.038
	47°	48°
′	*Inches.*	*Inches.*
5	0.001	0.001
10	.004	.004
15	.010	.010
20	.017	.017
25	.027	.026
30	.038	.038
	49°	50°
′	*Inches.*	*Inches.*
5	0.001	0.001
10	.004	.004
15	.010	.009
20	.017	.017
25	.026	.026
30	.038	.038

TABLE VIII.—*Co-ordinates for projection of maps. Scale* $\frac{1}{63360}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.		Meridional distances from even degree parallels.	Abscissas of developed parallel.					
			5′ longitude.	10′ longitude.	15′ longitude.	20′ longitude.	25′ longitude.	30′ longitude.
°	′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
25	00	----------	5.227	10.455	15.682	20.910	26.137	31.365
	10	11.472	5.220	10.441	15.661	20.881	26.101	31.322
	20	22.943	5.213	10.426	15.639	20.852	26.065	31.279
	30	34.415	5.206	10.412	15.618	20.824	26.029	31.235
	40	45.886	5.199	10.397	15.596	20.795	25.993	31.192
	50	57.358	5.191	10.383	15.575	20.766	25.958	31.149
26	00	68.830	5.184	10.369	15.553	20.737	25.922	31.106
	10	11.473	5.177	10.354	15.531	20.708	25.884	31.061
	20	22.946	5.169	10.339	15.508	20.678	25.847	31.017
	30	34.419	5.162	10.324	15.486	20.648	25.810	30.972
	40	45.892	5.154	10.309	15.463	20.618	25.772	30.927
	50	57.365	5.147	10.294	15.441	20.588	25.735	30.882
27	00	68.838	5.140	10.279	15.419	20.558	25.698	30.838
	10	11.475	5.132	10.264	15.396	20.528	25.659	30.791
	20	22.950	5.124	10.248	15.373	20.497	25.621	30.745
	30	34.424	5.116	10.233	15.349	20.466	25.582	30.699
	40	45.899	5.109	10.218	15.326	20.435	25.544	30.653
	50	57.374	5.101	10.202	15.303	20.404	25.505	30.607
28	00	68.849	5.093	10.187	15.280	20.374	25.467	30.560
	10	11.476	5.085	10.171	15.256	20.342	25.427	30.513
	20	22.953	5.077	10.155	15.232	20.310	25.387	30.465
	30	34.430	5.069	10.139	15.208	20.278	25.347	30.417
	40	45.906	5.061	10.123	15.185	20.246	25.308	30.369
	50	57.383	5.054	10.107	15.161	20.214	25.268	30.321
29	00	68.859	5.046	10.091	15.137	20.182	25.228	30.274
	10	11.478	5.037	10.075	15.112	20.150	25.187	30.224
	20	22.957	5.029	10.058	15.087	20.117	25.146	30.175
	30	34.435	5.021	10.042	15.063	20.084	25.105	30.126
	40	45.913	5.013	10.025	15.038	20.051	25.064	30.076
	50	57.391	5.004	10.009	15.013	20.018	25.022	30.027
30	00	68.870	4.996	9.993	14.989	19.985	24.981	29.978
	10	11.480	4.988	9.976	14.963	19.951	24.939	29.927
	20	22.960	4.979	9.959	14.938	19.917	24.896	29.876
	30	34.440	4.971	9.942	14.912	19.883	24.854	29.825
	40	45.920	4.962	9.925	14.887	19.849	24.812	29.774
	50	57.400	4.954	9.908	14.862	19.815	24.769	29.723
31	00	68.880	4.945	8.891	14.836	19.782	24.727	29.672

Ordinates of developed parallel.		
Longitude interval.	25°	26°
′	*Inches.*	*Inches.*
5	0.002	0.002
10	0.006	0.007
15	0.014	0.015
20	0.026	0.026
25	0.040	0.041
30	0.058	0.059
	27°	28°
5	0.002	0.002
10	0.007	0.007
15	0.015	0.016
20	0.027	0.028
25	0.042	0.043
30	0.061	0.063
Longitude interval.	28°	29°
′	*Inches.*	*Inches.*
5	0.002	0.002
10	0.007	0.007
15	0.016	0.016
20	0.028	0.028
25	0.043	0.044
30	0.063	0.064
	30°	31°
5	0.002	0.002
10	0.007	0.007
15	0.016	0.017
20	0.029	0.030
25	0.045	0.046
30	0.065	0.067

TABLE VIII.—*Co-ordinates for projection of maps. Scale* $\frac{1}{63360}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.		Meridional distances from even degree parallels.	Abscissas of developed parallel.					
			5′ longitude.	10′ longitude.	15′ longitude.	20′ longitude.	25′ longitude.	30′ longitude.
°	′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
31	00	68.880	4.945	9.891	14.836	19.782	24.727	29.672
	10	11.482	4.937	9.873	14.810	19.747	24.683	29.620
	20	22.964	4.928	9.856	14.784	19.712	24.640	29.568
	30	34.446	4.919	9.838	14.758	19.677	24.596	29.515
	40	45.927	4.910	9.821	14.731	19.642	24.552	29.463
	50	57.409	4.902	9.804	14.705	19.607	24.509	29.411
32	00	68.891	4.893	9.786	14.679	19.572	24.465	29.358
	10	11.484	4.884	9.768	14.652	19.536	24.420	29.305
	20	22.967	4.875	9.750	14.625	19.500	24.376	29.251
	30	34.451	4.866	9.732	14.598	19.465	24.331	29.197
	40	45.934	4.857	9.714	14.572	19.429	24.286	29.143
	50	57.418	4.848	9.696	14.545	19.393	24.241	29.089
33	00	68.902	4.839	9.679	14.518	19.357	24.196	29.036
	10	11.485	4.830	9.660	14.490	19.320	24.150	28.980
	20	22.971	4.821	9.642	14.462	19.283	24.104	28.925
	30	34.456	4.812	9.623	14.435	19.246	24.058	28.870
	40	45.942	4.802	9.605	14.407	19.210	24.012	28.814
	50	57.427	4.793	9.586	14.379	19.173	23.966	28.759
34	00	68.913	4.784	9.568	14.352	19.136	23.920	28.704
	10	11.487	4.774	9.549	14.323	19.098	23.872	28.647
	20	22.975	4.765	9.530	14.295	19.060	23.825	28.590
	30	34.462	~~4.755~~	9.511	14.267	19.022	23.778	28.533
	40	45.949	4.746	9.492	14.238	18.984	23.730	28.476
	50	57.437	4.737	9.473	14.210	18.946	23.683	28.420
35	00	68.924	4.727	9.454	14.181	18.908	23.636	28.363
	10	11.489	4.717	9.435	14.152	18.870	23.587	28.305
	20	22.978	4.708	9.415	14.123	18.831	23.539	28.246
	30	34.468	4.698	9.396	14.094	18.792	23.490	28.188
	40	45.957	4.688	9.377	14.065	18.758	23.442	28.130
	50	57.446	4.679	9.357	14.036	18.714	23.393	28.072
36	00	68.935	4.669	9.338	14.007	18.676	23.345	28.014
	10	11.491	4.659	9.318	13.977	18.636	23.295	27.954
	20	22.983	4.649	9.298	13.947	18.596	23.245	27.894
	30	34.474	4.639	9.278	13.917	18.556	23.195	27.835
	40	45.965	4.629	9.258	13.887	18.517	23.146	27.775
	50	57.457	4.619	9.238	13.858	18.477	28.096	27.715
37	00	68.948	4.609	9.219	13.828	18.437	23.046	27.656

Ordinates of developed parallel.		
Longitude interval.	31°	32°
′	*Inches.*	*Inches.*
5	0.002	0.002
10	0.007	0.007
15	0.017	0.017
20	0.030	0.030
25	0.046	0.047
30	0.067	0.068
	33°	34°
5	0.002	0.002
10	0.008	0.008
15	0.017	0.017
20	0.031	0.031
25	0.048	0.049
30	0.069	0.070
Longitude interval.	34°	35°
′	*Inches.*	*Inches.*
5	0.002	0.002
10	0.008	0.008
15	0.017	0.018
20	0.031	0.031
25	0.049	0.049
30	0.070	0.071
	36°	37°
5	0.002	0.002
10	0.008	0.008
15	0.018	0.018
20	0.032	0.032
25	0.050	0.050
30	0.072	0.073

4.75

TABLE VIII.—*Co-ordinates for projection of maps. Scale $\frac{1}{63360}$.*

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.		Meridional distances from even degree parallels.	Abscissas of developed parallel.					
			5′ longitude.	10′ longitude.	15′ longitude.	20′ longitude.	25′ longitude.	30′ longitude.
°	′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
37	00	68.948	4.609	9.219	13.828	18.437	23.046	27.656
	10	11.493	4.599	9.198	13.797	18.396	22.995	27.594
	20	22.986	4.589	9.178	13.767	18.356	22.944	27.533
	30	34.480	4.579	9.157	13.736	18.315	22.894	27.472
	40	45.973	4.568	9.137	13.706	18.274	22.843	27.411
	50	57.466	4.558	9.117	13.675	18.234	22.792	27.350
38	00	68.959	4.548	9.096	13.645	18.193	22.741	27.289
	10	11.495	4.538	9.076	13.613	18.151	22.689	27.227
	20	22.990	4.527	9.055	13.582	18.109	22.637	27.164
	30	34.485	4.517	9.034	13.551	18.068	22.585	27.102
	40	45.980	4.506	9.013	13.520	18.026	22.533	27.039
	50	57.475	4.496	8.992	13.488	17.984	22.481	26.977
39	00	68.970	4.486	8.971	13.457	17.943	22.429	26.914
	10	11.497	4.475	8.950	13.425	17.900	22.375	26.851
	20	22.994	4.464	8.929	13.393	17.858	22.322	26.787
	30	34.491	4.454	8.908	13.361	17.815	22.269	26.723
	40	45.988	4.443	8.886	13.330	17.773	22.216	26.659
	50	57.485	4.433	8.865	13.298	17.730	22.163	26.595
40	00	68.982	4.422	8.844	13.266	17.688	22.110	26.532
	10	11.499	4.411	8.822	13.233	17.644	22.055	26.466
	20	22.998	4.400	8.800	13.201	17.601	22.001	26.401
	30	34.497	4.389	8.779	13.168	17.557	21.947	26.336
	40	45.996	4.378	8.757	13.135	17.514	21.892	26.271
	50	57.495	4.368	8.735	13.103	17.470	21.838	26.206
41	00	68.994	4.357	8.713	13.070	17.427	21.784	26.140
	10	11.501	4.346	8.691	13.037	17.383	21.728	26.074
	20	23.002	4.335	8.669	13.004	17.338	21.673	26.007
	30	34.503	4.324	8.647	12.971	17.294	21.618	25.941
	40	46.004	4.312	8.625	12.937	17.250	21.562	25.875
	50	57.506	4.301	8.603	12.904	17.205	21.507	25.808
42	00	69.007	4.290	8.581	12.871	17.161	21.451	25.742
	10	11.503	4.279	8.558	12.837	17.116	21.395	25.674
	20	23.006	4.268	8.535	12.803	17.071	21.338	25.606
	30	34.510	4.256	8.513	12.769	17.025	21.282	25.538
	40	46.013	4.245	8.490	12.735	16.980	21.225	25.470
	50	57.516	4.234	8.467	12.701	16.935	21.169	25.402

Ordinates of developed parallel.		
Longitude interval.	37°	38°
′	*Inches.*	*Inches.*
5	0.002	0.002
10	0.008	0.008
15	0.018	0.018
20	0.032	0.033
25	0.050	0.051
30	0.073	0.073
	39°	40°
5	0.002	0.002
10	0.008	0.008
15	0.018	0.010
20	0.033	0.033
25	0.051	0.052
30	0.074	0.074
Longitude interval.	40°	41°
′	*Inches.*	*Inches.*
5	0.002	0.002
10	0.008	0.008
15	0.019	0.019
20	0.033	0.033
25	0.052	0.052
30	0.074	0.075
	42°	43°
5	0.002	0.002
10	0.008	0.008
15	0.019	0.019
20	0.033	0.033
25	0.052	0.052
30	0.075	0.075

TABLE VIII.—*Co-ordinates for projection of maps. Scale* $\frac{1}{63360}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.		Meridional distances from even degree parallels.	Abscissas of developed parallel.					
			5′ longitude.	10′ longitude.	15′ longitude.	20′ longitude.	25′ longitude.	30′ longitude.
°	′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
43	00	69.019	4.222	8.445	12.667	16.890	21.112	25.334
	10	11.505	4.211	8.422	12.633	16.844	21.054	25.265
	20	23.010	4.199	8.399	12.598	16.798	20.997	25.196
	30	34.515	4.188	8.376	12.564	16.751	20.939	25.127
	40	46.020	4.176	8.353	12.529	16.705	20.882	25.058
	50	57.525	4.165	8.330	12.494	16.659	20.824	24.989
44	00	69.030	4.153	8.307	12.460	16.613	20.767	24.920
	10	11.507	4.142	8.283	12.425	16.566	20.708	24.849
	20	23.014	4.130	8.260	12.390	16.519	20.649	24.779
	30	34.522	4.118	8.236	12.354	16.473	20.591	24.709
	40	46.029	4.106	8.213	12.319	16.426	20.532	24.638
	50	57.536	4.095	8.189	12.284	16.379	20.473	24.568
45	00	69.043	4.083	8.166	12.249	16.332	20.415	24.498
	10	11.509	4.071	8.142	12.213	16.284	20.355	24.426
	20	23.018	4.059	8.118	12.177	16.236	20.295	24.354
	30	34.528	4.047	8.094	12.141	16.188	20.236	24.283
	40	46.037	4.035	8.070	12.105	16.141	20.176	24.211
	50	57.546	4.023	8.046	12.070	16.093	20.116	24.139
46	00	69.055	4.011	8.023	12.034	16.045	20.056	24.068
	10	11.511	3.999	7.998	11.997	15.997	19.996	23.995
	20	23.023	3.987	7.974	11.961	15.948	19.935	23.922
	30	34.534	3.975	7.950	11.925	15.899	19.974	23.849
	40	46.045	3.963	7.925	11.888	15.851	19.813	23.776
	50	57.567	3.951	7.901	11.852	15.802	19.753	23.703
47	00	69.068	3.938	7.877	11.815	15.754	19.692	23.630
	10	11.513	3.926	7.852	11.778	15.704	19.630	23.556
	20	23.027	3.914	7.827	11.741	15.655	19.569	23.482
	30	34.540	3.901	7.803	11.704	15.606	19.507	23.408
	40	46.053	3.889	7.778	11.667	15.556	19.445	23.334
	50	57.567	3.877	7.753	11.630	15.507	19.383	23.260
48	00	69.080	3.864	7.729	11.593	15.457	19.322	23.186
	10	11.516	3.852	7.704	11.555	15.407	19.259	23.111
	20	23.031	3.839	7.679	11.518	15.357	19.196	23.035
	30	34.546	3.827	7.653	11.480	15.307	19.134	22.960
	40	46.062	3.814	7.628	11.442	15.257	19.071	22.885
	50	57.577	3.802	7.603	11.405	15.206	19.008	22.810
49	00	69.093	3.789	7.578	11.367	15.156	18.945	22.734
	10	11.517	3.776	7.553	11.329	15.105	18.882	22.658
	20	23.035	3.764	7.527	11.291	15.054	18.818	22.581
	30	34.552	3.751	7.502	11.253	15.003	18.754	22.505
	40	46.070	3.738	7.476	11.214	14.952	18.690	22.429
	50	57.587	3.725	7.451	11.176	14.901	18.627	22.352
50	00	69.105	3.713	7.425	11.138	14.850	18.563	22.276

Ordinates of developed parallel.		
Longitude interval.	43°	44°
′	*Inches.*	*Inches.*
5	0.002	0.002
10	0.008	0.008
15	0.019	0.019
20	0.033	0.034
25	0.052	0.052
30	0.075	0.075
	45°	46°
5	0.002	0.002
10	0.008	0.008
15	0.019	0.019
20	0.034	0.034
25	0.053	0.053
30	0.076	0.076
Longitude interval.	46°	47°
′	*Inches.*	*Inches.*
5	0.002	0.002
10	0.008	0.008
15	0.019	0.019
20	0.034	0.034
25	0.053	0.052
30	0.076	0.075
	48°	49°
5	0.002	0.002
10	0.008	0.008
15	0.019	0.019
20	0.033	0.033
25	0.052	0.052
30	0.075	0.075
	49°	50°
5	0.002	0.002
10	0.008	0.008
15	0.019	0.019
20	0.033	0.033
25	0.052	0.052
30	0.075	0.075

TABLE IX.—*Co-ordinates for projection of maps. Scale $\frac{1}{62500}$.*

[Derivation of table explained in section (5) use of table explained on page 22.]

Latitude of parallel.		Meridional distances from even degree parallels.	Abscissas of developed parallel.					
			2½′ longitude.	5′ longitude.	7½′ longitude.	10′ longitude.	12½′ longitude.	15′ longitude.
°	′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
25	00	----------	2.650	5.299	7.949	10.599	13.248	15.898
	05	5.815	2.648	5.296	7.944	10.591	13.239	15.887
	10	11.629	2.646	5.292	7.938	10.584	13.230	15.876
	15	17.444	2.644	5.288	7.933	10.577	13.221	15.865
	20	23.259	2.642	5.285	7.927	10.569	13.212	15.854
	25	29.074	2.641	5.281	7.922	10.562	13.203	15.843
	30	34.888	2.639	5.277	7.916	10.555	13.194	15.832
	35	----------	2.637	5.274	7.011	10.548	13.184	15.821
	40	----------	2.635	5.270	7.905	10.540	13.175	15.810
	45	----------	2.633	5.266	7.900	10.533	13.166	15.799
	50	----------	2.631	5.263	7.894	10.526	13.157	15.788
	55	----------	2.630	5.259	7.889	10.518	13.148	15.777
26	00	----------	2.628	5.256	7.883	10.511	13.139	15.766
	05	5.816	2.626	5.252	7.878	10.504	13.129	15.755
	10	11.631	2.624	5.248	7.872	10.496	13.120	15.744
	15	17.447	2.622	5.244	7.866	10.489	13.111	15.733
	20	23.262	2.620	5.241	7.861	10.481	13.101	15.721
	25	29.078	2.618	5.237	7.855	10.473	13.092	15.710
	30	34.893	2.617	5.233	7.849	10.466	13.082	15.699
	35	----------	2.615	5.229	7.844	10.458	13.073	15.688
	40	----------	2.613	5.225	7.838	10.451	13.064	15.676
	45	----------	2.611	5.222	7.833	10.443	13.054	15.665
	50	----------	2.609	5.218	7.827	10.436	13.045	15.654
	55	----------	2.607	5.214	7.821	10.428	13.035	15.642
27	00	----------	2.605	5.210	7.816	10.421	13.026	15.631
	05	5.816	2.603	5.207	7.810	10.413	13.016	15.620
	10	11.633	2.601	5.203	7.804	10.405	13.006	15.608
	15	17.449	2.599	5.199	7.798	10.397	12.997	15.596
	20	23.265	2.597	5.195	7.792	10.389	12.987	15.584
	25	29.082	2.595	5.191	7.786	10.382	12.977	15.572
	30	34.898	2.593	5.187	7.780	10.374	12.967	15.561
	35	----------	2.591	5.183	7.774	10.366	12.957	15.549
	40	----------	2.590	5.179	7.769	10.358	12.948	15.537
	45	----------	2.588	5.175	7.763	10.350	12.938	15.525
	50	----------	2.586	5.171	7.757	10.342	12.928	15.514
	55	----------	2.584	5.167	7.751	10.335	12.918	15.502
28	00	----------	2.582	5.163	7.745	10.327	12.908	15.490
	05	5.817	2.580	5.159	7.739	10.319	12.898	15.478
	10	11.634	2.578	5.155	7.733	10.311	12.888	15.466
	15	17.451	2.576	5.151	7.727	10.303	12.878	15.454
	20	23.268	2.574	5.147	7.721	10.294	12.868	15.442
	25	29.085	2.572	5.143	7.715	10.286	12.858	15.430
	30	34.903	2.570	5.139	7.709	10.278	12.848	15.418
	35	----------	2.568	5.135	7.703	10.270	12.838	15.405
	40	----------	2.566	5.131	7.697	10.262	12.828	15.393
	45	----------	2.564	5.127	7.691	10.254	12.818	15.381
	50	----------	2.562	5.123	7.685	10.246	12.808	15.369
	55	----------	2.560	5.119	7.679	10.238	12.798	15.357
29	00	----------	2.558	5.115	7.673	10.230	12.788	15.345

Ordinates of developed parallel.

Longitude interval.	25°	26°
′	*Inches.*	*Inches.*
2½	0.000	0.000
5	.002	.002
7½	.004	.004
10	.007	.007
12½	.010	.010
15	.015	.015

	27°	
′	*Inches.*	
2½	0.000	
5	.002	
7½	.004	
10	.007	
12½	.011	
15	.015	

	27°	28°
′	*Inches.*	*Inches.*
2½	0.000	0.000
5	.002	.002
7½	.004	.004
10	.007	.007
12½	.011	.011
15	.015	.016

	29°	
′	*Inches.*	
2½	0.000	
5	.002	
7½	.004	
10	.007	
12½	.011	
15	.016	

TABLE IX.—*Co-ordinates for projection of maps. Scale* $\frac{1}{62500}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.		Meridional distances from even degree parallels.	Abscissas of developed parallel.					
			2½′ longitude.	5′ longitude.	7½′ longitude.	10′ longitude.	12½′ longitude.	15′ longitude.
°	′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
29	00	----------	2.558	5.115	7.673	10.230	12.788	15.345
	05	5.818	2.555	5.111	7.666	10.222	12.777	15.333
	10	11.636	2.553	5.107	7.660	10.213	12.767	15.320
	15	17.454	2.551	5.103	7.654	10.205	12.756	15.308
	20	23.272	2.549	5.098	7.648	10.197	12.746	15.295
	25	29.090	2.547	5.094	7.641	10.188	12.735	15.283
	30	34.908	2.545	5.090	7.635	10.180	12.725	15.270
	35	----------	2.543	5.086	7.629	10.172	12.715	15.258
	40	----------	2.541	5.082	7.623	10.164	12.704	15.245
	45	----------	2.539	5.078	7.616	10.155	12.694	15.233
	50	----------	2.537	5.073	7.610	10.147	12.684	15.220
	55	----------	2.535	5.069	7.604	10.138	12.673	15.208
30	00	----------	2.533	5.065	7.598	10.130	12.663	15.195
	05	5.819	2.530	5.061	7.591	10.122	12.652	15.182
	10	11.638	2.528	5.057	7.585	10.113	12.641	15.169
	15	17.457	2.526	5.052	7.578	10.104	12.630	15.157
	20	23.276	2.524	5.048	7.572	10.096	12.620	15.144
	25	29.095	2.522	5.044	7.565	10.087	12.609	15.131
	30	34.913	2.520	5.039	7.559	10.079	12.598	15.118
	35	----------	2.518	5.035	7.552	10.070	12.587	15.105
	40	----------	2.515	5.031	7.546	10.061	12.577	15.092
	45	----------	2.513	5.026	7.540	10.053	12.566	15.079
	50	----------	2.511	5.022	7.533	10.044	12.555	15.066
	55	----------	2.509	5.018	7.527	10.036	12.544	15.053
31	00	----------	2.507	5.014	7.520	10.027	12.534	15.040
	05	5.820	2.505	5.009	7.514	10.018	12.523	15.027
	10	11.640	2.502	5.005	7.507	10.009	12.512	15.014
	15	17.460	2.500	5.000	7.500	10.000	12.500	15.000
	20	23.280	2.498	4.996	7.494	9.992	12.489	14.987
	25	29.100	2.496	4.991	7.487	9.983	12.478	14.974
	30	34.919	2.494	4.987	7.480	9.974	12.467	14.961
	35	----------	2.491	4.983	7.474	9.965	12.456	14.948
	40	----------	2.489	4.978	7.467	9.956	12.445	14.934
	45	----------	2.487	4.974	7.460	9.947	12.434	14.921
	50	----------	2.485	4.969	7.454	9.938	12.423	14.908
	55	----------	2.482	4.965	7.447	9.930	12.412	14.894
32	00	----------	2.480	4.960	7.441	9.921	12.401	14.881
	05	5.821	2.478	4.956	7.434	9.912	12.390	14.868
	10	11.642	2.476	4.951	7.427	9.903	12.378	14.854
	15	17.462	2.473	4.947	7.420	9.894	12.367	14.840
	20	23.283	2.471	4.942	7.413	9.884	12.356	14.827
	25	29.104	2.469	4.938	7.407	9.875	12.344	14.813
	30	34.925	2.467	4.933	7.400	9.866	12.333	14.800
	35	----------	2.464	4.929	7.393	9.857	12.322	14.786
	40	----------	2.462	4.924	7.386	9.848	12.310	14.772
	45	----------	2.460	4.920	7.379	9.839	12.299	14.759
	50	----------	2.458	4.915	7.372	9.831	12.287	14.745
	55	----------	2.455	4.910	7.366	9.821	12.276	14.731
33	00	----------	2.453	4.906	7.359	9.812	12.265	14.718

Ordinates of developed parallel.

Longitude interval.	29°	30°
′	*Inches.*	*Inches.*
2½	0.000	0.000
5	.002	.002
7½	.004	.004
10	.007	.007
12½	.011	.012
15	.016	.017
	31°	
2½	0.000	
5	.002	
7½	.004	
10	.008	
12½	.012	
15	.017	

Longitude interval.	31°	32°
′	*Inches.*	*Inches.*
2½	0.000	0.000
5	.002	.002
7½	.004	.004
10	.008	.008
12½	.012	.012
15	.017	.017
	33°	
2½	0.000	
5	.002	
7½	.004	
10	.008	
12½	.012	
15	.017	

TABLE IX.—*Co-ordinates for projection of maps. Scale* $\frac{1}{62500}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel		Meridional distances from even degree parallels.	Abscissas of developed parallel.					
			2½′ longitude.	5′ longitude.	7½′ longitude.	10′ longitude.	12½′ longitude.	15 longitude.
°	′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
33	00	----------	2.453	4.906	7.359	9.812	12.265	14.718
	05	5.822	2.451	4.901	7.352	9.802	12.253	14.704
	10	11.643	2.448	4.897	7.345	9.793	12.241	14.690
	15	17.465	2.446	4.892	7.338	9.784	12.230	14.676
	20	23.287	2.444	4.887	7.331	9.774	12.218	14.662
	25	29.109	2.441	4.882	7.324	9.765	12.206	14.648
	30	34.930	2.439	4.878	7.317	9.756	12.195	14.633
	35	----------	2.437	4.873	7.310	9.746	12.183	14.619
	40	----------	2.434	4.868	7.303	9.737	12.171	14.605
	45	----------	2.432	4.864	7.296	9.728	12.160	14.591
	50	----------	2.430	4.859	7.289	9.718	12.148	14.577
	55	----------	2.427	4.854	7.282	9.709	12.136	14.563
34	00	----------	2.425	4.850	7.275	9.700	12.124	14.549
	05	5.823	2.423	4.845	7.267	9.690	12.112	14.535
	10	11.645	2.420	4.840	7.260	9.680	12.100	14.520
	15	17.468	2.418	4.835	7.253	9.671	12.088	14.506
	20	23.291	2.415	4.831	7.246	9.661	12.076	14.492
	25	29.113	2.413	4.826	7.239	9.652	12.064	14.477
	30	34.936	2.411	4.821	7.231	9.642	12.052	14.463
	35	----------	2.408	4.816	7.224	9.632	12.040	14.448
	40	----------	2.406	4.811	7.217	9.623	12.028	14.434
	45	----------	2.403	4.807	7.210	9.613	12.016	14.420
	50	----------	2.401	4.802	7.203	9.604	12.004	14.405
	55	----------	2.399	4.797	7.195	9.594	11.992	14.391
35	00	----------	2.396	4.792	7.188	9.584	11.980	14.376
	05	5.824	2.394	4.787	7.181	9.574	11.968	14.362
	10	11.647	2.391	4.782	7.174	9.565	11.956	14.347
	15	17.471	2.389	4.777	7.166	9.555	11.944	14.332
	20	23.294	2.386	4.773	7.159	9.545	11.931	14.318
	25	29.118	2.384	4.768	7.151	9.535	11.919	14.303
	30	34.942	2.381	4.763	7.144	9.525	11.907	14.288
	35	----------	2.379	4.758	7.137	9.516	11.895	14.273
	40	----------	2.376	4.753	7.129	9.506	11.882	14.259
	45	----------	2.374	4.748	7.122	9.496	11.870	14.244
	50	----------	2.372	4.743	7.115	9.486	11.858	14.229
	55	----------	2.369	4.738	7.107	9.476	11.845	14.214
36	00	----------	2.367	4.733	7.100	9.466	11.833	14.200
	05	5.824	2.364	4.728	7.092	9.456	11.820	14.185
	10	11.649	2.362	4.723	7.085	9.446	11.808	14.169
	15	17.473	2.359	4.718	7.077	9.436	11.795	14.154
	20	23.297	2.357	4.713	7.070	9.426	11.783	14.139
	25	29.122	2.354	4.708	7.062	9.416	11.770	14.124
	30	34.946	2.352	4.703	7.055	9.406	11.758	14.109
	35	----------	2.349	4.698	7.047	9.396	11.745	14.094
	40	----------	2.346	4.693	7.039	9.386	11.732	14.079
	45	----------	2.344	4.688	7.032	9.376	11.720	14.064
	50	----------	2.341	4.683	7.024	9.366	11.707	14.048
	55	----------	2.339	4.678	7.017	9.356	11.694	14.033
37	00	----------	2.336	4.673	7.009	9.345	11.682	14.018

Ordinates of developed parallel.		
Longitude interval.	33°	34°
′	*Inches.*	*Inches.*
2½	0.000	0.000
5	.002	.002
7½	.004	.004
10	.008	.008
12½	.012	.012
15	.017	.018
	35°	
2½	0.000	
5	.002	
7½	.004	
10	.008	
12½	.012	
15	.018	
Longitude interval.	35°	36°
′	*Inches.*	*Inches.*
2½	0.000	0.001
5	.002	.002
7½	.004	.005
10	.008	.008
12½	.012	.013
15	.018	.018
	37°	
2½	0.001	
5	.002	
7½	.005	
10	.008	
12½	.013	
15	.018	

TABLE IX.—*Co-ordinates for projection of maps. Scale $\frac{1}{62500}$.*

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.		Meridional distances from even degree parallels.	Abscissas of developed parallel.					
			2½′ longitude.	5′ longitude.	7½′ longitude.	10′ longitude.	12½′ longitude.	15′ longitude.
°	′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
37	00	------------	2.336	4.673	7.009	9.345	11.682	14.018
	05	5.826	2.334	4.667	7.001	9.335	11.669	14.003
	10	11.651	2.331	4.662	6.994	9.325	11.656	13.987
	15	17.477	2.329	4.657	6.986	9.314	11.643	13.972
	20	23.302	2.326	4.652	6.978	9.304	11.630	13.956
	25	29.128	2.323	4.647	6.970	9.294	11.617	13.941
	30	34.954	2.321	4.642	6.963	9.283	11.604	13.925
	35	------------	2.318	4.637	6.955	9.273	11.591	13.910
	40	------------	2.316	4.631	6.947	9.263	11.578	13.894
	45	------------	2.313	4.626	6.939	9.253	11.566	13.879
	50	------------	2.311	4.621	6.932	9.242	11.553	13.863
	55	------------	2.308	4.616	6.924	9.232	11.540	13.848
38	00	------------	2.305	4.611	6.916	9.222	11.527	13.832
	05	5.827	2.303	4.606	6.908	9.211	11.514	13.817
	10	11.653	2.300	4.600	6.900	9.201	11.501	13.801
	15	17.480	2.298	4.595	6.892	9.190	11.488	13.785
	20	23.306	2.295	4.590	6.885	9.179	11.474	13.769
	25	29.133	2.292	4.584	6.877	9.169	11.461	13.753
	30	34.960	2.290	4.579	6.869	9.158	11.448	13.737
	35	------------	2.287	4.574	6.861	9.148	11.435	13.722
	40	------------	2.284	4.569	6.853	9.137	11.422	13.706
	45	------------	2.282	4.563	6.845	9.127	11.408	13.690
	50	------------	2.279	4.558	6.837	9.116	11.395	13.674
	55	------------	2.276	4.553	6.829	9.106	11.382	13.658
39	00	------------	2.274	4.547	6.821	9.095	11.369	13.642
	05	5.828	2.271	4.542	6.813	9.084	11.355	13.626
	10	11.655	2.268	4.537	6.805	9.073	11.342	13.610
	15	17.483	2.266	4.531	6.797	9.063	11.328	13.594
	20	23.310	2.263	4.526	6.789	9.052	11.315	13.578
	25	29.138	2.260	4.521	6.781	9.041	11.301	13.562
	30	34.966	2.258	4.515	6.773	9.030	11.288	13.545
	35	------------	2.255	4.510	6.765	9.020	11.274	13.529
	40	------------	2.252	4.504	6.757	9.009	11.261	13.513
	45	------------	2.250	4.499	6.748	8.998	11.247	13.497
	50	------------	2.247	4.494	6.740	8.987	11.234	13.481
	55	------------	2.244	4.488	6.732	8.976	11.221	13.465
40	00	------------	2.241	4.483	6.724	8.966	11.207	13.448
	05	5.829	2.239	4.477	6.716	8.955	11.193	13.432
	10	11.657	2.236	4.472	6.708	8.944	11.180	13.415
	15	17.486	2.233	4.466	6.699	8.933	11.166	13.399
	20	23.314	2.230	4.461	6.691	8.922	11.152	13.382
	25	29.143	2.228	4.455	6.683	8.911	11.138	13.366
	30	34.972	2.225	4.450	6.675	8.899	11.124	13.349
	35	------------	2.222	4.444	6.666	8.888	11.111	13.333
	40	------------	2.219	4.439	6.658	8.877	11.097	13.316
	45	------------	2.217	4.433	6.650	8.866	11.083	13.300
	50	------------	2.214	4.428	6.642	8.855	11.069	13.283
	55	------------	2.211	4.422	6.633	8.844	11.056	13.267
41	00	------------	2.208	4.417	6.625	8.833	11.042	13.250

Ordinates of developed parallel.

Longitude interval.	37°	38°
′	*Inches.*	*Inches.*
2½	0.001	0.001
5	.002	.002
7½	.005	.005
10	.008	.008
12½	.013	.013
15	.018	.019
	39°	
′	*Inches.*	
2½	0.001	
5	.002	
7½	.005	
10	.008	
12½	.013	
15	.019	

Longitude interval.	39°	40°
′	*Inches.*	*Inches.*
2½	0.001	0.001
5	.002	.002
7½	.005	.005
10	.008	.008
12½	.013	.013
15	.019	.019
	41°	
′	*Inches.*	
2½	0.001	
5	.002	
7½	.005	
10	.008	
12½	.013	
15	.019	

TABLE IX.—*Co-ordinates for projection of maps. Scale* $\frac{1}{62500}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.		Meridional distances from even degree parallels.	Abscissas of developed parallel.					
			2½′ longitude.	5′ longitude.	7½′ longitude.	10′ longitude.	12½′ longitude.	15′ longitude.
°	′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
41	00	----------	2.208	4.417	6.625	8.833	11.042	13.250
	05	5.830	2.206	4.411	6.617	8.822	11.028	13.233
	10	11.659	2.203	4.406	6.608	8.811	11.014	13.216
	15	17.489	2.200	4.400	6.600	8.800	11.000	13.200
	20	23.319	2.197	4.394	6.591	8.789	10.986	13.183
	25	29.149	2.194	4.389	6.583	8.777	10.972	13.166
	30	34.978	2.192	4.383	6.575	8.766	10.958	13.149
	35	----------	2.189	4.377	6.566	8.755	10.944	13.132
	40	----------	2.186	4.372	6.558	8.744	10.930	13.115
	45	----------	2.183	4.366	6.549	8.732	10.916	13.099
	50	----------	2.180	4.361	6.541	8.721	10.902	13.082
	55	----------	2.178	4.355	6.533	8.710	10.888	13.065
42	00	----------	2.175	4.349	6.524	8.699	10.873	13.048
	05	5.831	2.172	4.344	6.515	8.687	10.859	13.031
	10	11.661	2.169	4.338	6.507	8.676	10.845	13.014
	15	17.492	2.166	4.332	6.498	8.664	10.830	12.996
	20	23.323	2.163	4.326	6.490	8.653	10.816	12.979
	25	29.154	2.160	4.321	6.481	8.641	10.802	12.962
	30	34.984	2.158	4.315	6.472	8.630	10.787	12.945
	35	----------	2.155	4.309	6.464	8.618	10.773	12.928
	40	----------	2.152	4.304	6.455	8.607	10.759	12.910
	45	----------	2.149	4.298	6.447	8.596	10.744	12.893
	50	----------	2.146	4.292	6.438	8.584	10.730	12.876
	55	----------	2.143	4.286	6.429	8.573	10.716	12.859
43	00	----------	2.140	4.281	6.421	8.561	10.701	12.842
	05	5.832	2.137	4.275	6.412	8.550	10.687	12.824
	10	11.663	2.134	4.269	6.403	8.538	10.672	12.807
	15	17.495	2.132	4.263	6.395	8.526	10.658	12.789
	20	23.327	2.129	4.257	6.386	8.514	10.643	12.772
	25	29.159	2.126	4.251	6.377	8.503	10.628	12.754
	30	34.990	2.123	4.246	6.368	8.491	10.614	12.736
	35	----------	2.120	4.240	6.359	8.479	10.599	12.719
	40	----------	2.117	4.234	6.351	8.468	10.585	12.701
	45	----------	2.114	4.228	6.342	8.456	10.570	12.684
	50	----------	2.111	4.222	6.333	8.444	10.555	12.666
	55	----------	2.108	4.216	6.324	8.432	10.541	12.649
44	00	----------	2.105	4.210	6.316	8.421	10.526	12.631
	05	5.833	2.102	4.205	6.307	8.409	10.511	12.613
	10	11.666	2.099	4.199	6.298	8.397	10.496	12.596
	15	17.498	2.096	4.193	6.289	8.385	10.482	12.578
	20	23.331	2.093	4.187	6.280	8.373	10.467	12.560
	25	29.164	2.090	4.181	6.271	8.361	10.452	12.542
	30	34.997	2.087	4.175	6.262	8.350	10.437	12.524
	35	----------	2.084	4.169	6.253	8.338	10.422	12.506
	40	----------	2.081	4.163	6.244	8.326	10.407	12.489
	45	----------	2.078	4.157	6.235	8.314	10.392	12.471
	50	----------	2.076	4.151	6.227	8.302	10.377	12.453
	55	----------	2.073	4.145	6.218	8.290	10.363	12.435
45	00	----------	2.070	4.139	6.209	8.278	10.348	12.417

Ordinates of developed parallel.		
Longitude interval.	41°	42°
′	*Inches.*	*Inches.*
2½	0.001	0.001
5	.002	.002
7½	.005	.005
10	.008	.008
12½	.013	.013
15	.019	.019
	43°	
2½	0.001	
5	.002	
7½	.005	
10	.008	
12½	.013	
15	.019	
Longitude interval.	43°	44°
′	*Inches.*	*Inches.*
2½	0.001	0.001
5	.002	.002
7½	.005	.005
10	.008	.009
12½	.013	.013
15	.019	.019
	45°	
′	*Inches.*	
2½	0.001	
5	.002	
7½	.005	
10	.009	
12½	.013	
15	.019	

TABLE IX.—*Co-ordinates for projection of maps. Scale* $\frac{1}{62500}$.

[Derivation of table explained in section (5) use of table explained on page 22.]

Latitude of parallel.		Meridional distances from even degree parallels.	Abscissas of developed parallel.					
			2½′ longitude.	5′ longitude.	7½′ longitude.	10′ longitude.	12½′ longitude.	15′ longitude.
°	′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
45	00	----------	2.070	4.139	6.209	8.278	10.348	12.417
	05	5.834	2.067	4.133	6.200	8.266	10.333	12.399
	10	11.668	2.064	4.127	6.191	8.254	10.318	12.381
	15	17.501	2.061	4.121	6.181	8.242	10.302	12.363
	20	23.335	2.058	4.115	6.172	8.230	10.287	12.345
	25	29.169	2.054	4.109	6.163	8.218	10.272	12.327
	30	35.003	2.051	4.103	6.154	8.206	10.257	12.308
	35	----------	2.048	4.097	6.145	8.194	10.242	12.290
	40	----------	2.045	4.091	6.136	8.181	10.227	12.272
	45	----------	2.042	4.085	6.127	8.169	10.212	12.254
	50	----------	2.039	4.079	6.118	8.157	10.197	12.236
	55	----------	2.036	4.073	6.109	8.145	10.182	12.218
46	00	----------	2.033	4.067	6.100	8.133	10.166	12.200
	05	5.835	2.030	4.060	6.091	8.121	10.151	12.181
	10	11.670	2.027	4.054	6.081	8.108	10.136	12.163
	15	17.504	2.024	4.048	6.072	8.096	10.120	12.144
	20	23.339	2.021	4.042	6.063	8.084	10.105	12.126
	25	29.174	2.018	4.036	6.054	8.072	10.090	12.107
	30	35.009	2.015	4.030	6.044	8.059	10.074	12.089
	35	----------	2.012	4.023	6.035	8.047	10.059	12.070
	40	----------	2.009	4.017	6.026	8.035	10.043	12.052
	45	----------	2.006	4.011	6.017	8.022	10.028	12.033
	50	----------	2.003	4.005	6.008	8.010	10.013	12.015
	55	----------	1.999	3.999	5.998	7.998	9.997	11.996
47	00	----------	1.996	3.993	5.989	7.985	9.982	11.978
	05	5.836	1.993	3.986	5.980	7.973	9.966	11.959
	10	11.672	1.990	3.980	5.970	7.960	9.950	11.940
	15	17.508	1.987	3.974	5.961	7.948	9.935	11.922
	20	23.344	1.984	3.968	5.951	7.935	9.919	11.903
	25	29.180	1.981	3.961	5.942	7.923	9.903	11.884
	30	35.015	1.977	3.955	5.933	7.910	9.888	11.865
	35	----------	1.974	3.949	5.923	7.898	9.872	11.846
	40	----------	1.971	3.943	5.914	7.885	9.856	11.828
	45	----------	1.968	3.936	5.904	7.872	9.841	11.809
	50	----------	1.965	3.930	5.895	7.860	9.825	11.790
	55	----------	1.962	3.924	5.886	7.848	9.809	11.771
48	00	----------	1.959	3.917	5.876	7.835	9.794	11.752
	05	5.837	1.956	3.911	5.867	7.822	9.778	11.783
	10	11.674	1.952	3.905	5.857	7.810	9.763	11.714
	15	17.511	1.949	3.898	5.848	7.797	9.746	11.695
	20	23.348	1.946	3.892	5.838	7.784	9.730	11.676
	25	29.185	1.943	3.886	5.829	7.771	9.714	11.657
	30	35.021	1.940	3.879	5.819	7.759	9.698	11.638
	35	----------	1.937	3.873	5.810	7.746	9.683	11.619
	40	----------	1.933	3.867	5.800	7.733	9.667	11.600
	45	----------	1.930	3.860	5.790	7.721	9.651	11.581
	50	----------	1.927	3.854	5.781	7.708	9.635	11.562
	55	----------	1.924	3.848	5.771	7.695	9.619	11.543
49	00	----------	1.921	3.841	5.762	7.682	9.603	11.524
	05	5.838	1.917	3.835	5.752	7.670	9.587	11.504
	10	11.676	1.914	3.828	5.742	7.657	9.571	11.485
	15	17.514	1.911	3.822	5.733	7.644	9.555	11.466
	20	23.352	1.908	3.815	5.723	7.631	9.538	11.446
	25	29.190	1.905	3.809	5.713	7.618	9.522	11.427
	30	35.027	1.901	3.802	5.704	7.605	9.506	11.407
	35	----------	1.898	3.796	5.694	7.592	9.490	11.388
	40	----------	1.895	3.790	5.684	7.579	9.474	11.369
	45	----------	1.892	3.783	5.675	7.566	9.458	11.349
	50	----------	1.888	3.777	5.665	7.553	9.442	11.330
	55	----------	1.885	3.770	5.655	7.540	9.426	11.311
50	00	----------	1.882	3.764	5.646	7.528	9.409	11.291

Ordinates of developed parallel.

Longitude interval.	45°	46°
′	*Inches.*	*Inches.*
2½	0.001	0.001
5	.002	.002
7½	.005	.005
10	.009	.009
12½	.013	.013
15	.019	.019

	47°	
′	*Inches.*	
2½	0.001	
5	.002	
7½	.005	
10	.008	
12½	.013	
15	.019	

Longitude interval.	47°	48°
′	*Inches.*	*Inches.*
2½	0.001	0.001
5	.002	.002
7½	.005	.005
10	.008	.008
12½	.013	.013
15	.019	.019

	49°	
′	*Inches.*	
2½	0.001	
5	.002	
7½	.005	
10	.008	
12½	.013	
15	.019	

	49°	50°
′	*Inches.*	*Inches.*
2½	0.001	0.001
5	.002	.002
7½	.005	.005
10	.008	.008
12½	.013	.013
15	.019	.019

TABLE X.—*Co-ordinates for projection of maps. Scale* $\frac{1}{31680}$.

[Derivation of table explained in section (5) use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
25 00	2.091	4.182	6.273	8.364	10.455	12.546	14.637	16.728	18.819	20.910
1	.091	.182	.272	.363	.454	.544	.635	.726	.817	.907
2	.091	.181	.271	.362	.452	.542	.633	.724	.814	.904
3	.091	.181	.270	.361	.451	.541	.631	.721	.812	.900
4	.090	.180	.269	.360	.449	.539	.629	.719	.809	.897
5	.090	.180	.268	.358	.448	.537	.627	.717	.807	.894
6	.090	.179	.267	.356	.446	.535	.625	.714	.804	.890
7	.089	.179	.267	.355	.445	.534	.623	.712	.802	.887
8	.089	.178	.266	.354	.444	.532	.621	.709	.799	.885
9	.089	.177	.265	.353	.442	.530	.619	.707	.796	.883
10	2.088	4.176	6.264	8.352	10.441	12.529	14.617	16.705	18.793	20.881
11	.088	.176	.263	.351	.440	.527	.615	.703	.791	.878
12	.088	.175	.263	.350	.438	.525	.613	.701	.788	.875
13	.087	.175	.262	.349	.437	.523	.611	.698	.786	.872
14	.087	.174	.261	.348	.435	.522	.609	.696	.783	.869
15	.087	.174	.260	.347	.434	.520	.607	.694	.781	.866
16	.086	.173	.259	.346	.432	.518	.605	.691	.778	.864
17	.086	.173	.259	.344	.431	.516	.603	.689	.776	.861
18	.086	.172	.258	.343	.430	.515	.601	.687	.773	.858
19	.085	.171	.257	.342	.428	.513	.598	.684	.770	.855
20	2.085	4.170	6.256	8.341	10.426	12.511	14.596	16.682	18.767	20.852
21	.085	.170	.255	.340	.424	.509	.594	.680	.765	.849
22	.085	.169	.254	.339	.423	.507	.592	.678	.762	.846
23	.084	.169	.253	.338	.422	.506	.590	.675	.759	.843
24	.084	.168	.252	.337	.420	.504	.588	.673	.757	.841
25	.084	.168	.251	.336	.418	.502	.587	.671	.755	.838
26	.083	.167	.250	.335	.417	.501	.585	.668	.752	.835
27	.083	.167	.249	.334	.415	.499	.583	.666	.749	.832
28	.083	.166	.248	.332	.414	.497	.581	.664	.747	.829
29	.083	.166	.248	.331	.413	.495	.579	.662	.745	.827
30	2.082	4.165	6.247	8.330	10.412	12.494	14.577	16.659	18.742	20.824
31	.082	.165	.246	.329	.410	.492	.575	.657	.739	.821
32	.082	.164	.245	.328	.409	.490	.573	.655	.736	.818
33	.081	.164	.244	.326	.407	.489	.571	.652	.734	.815
34	.081	.163	.243	.325	.406	.487	.569	.650	.731	.812
35	.081	.163	.242	.324	.404	.485	.566	.648	.728	.810
36	.081	.162	.242	.323	.403	.484	.564	.645	.726	.807
37	.080	.162	.241	.322	.401	.482	.562	.643	.723	.804
38	.080	.161	.240	.320	.400	.480	.560	.641	.721	.801
39	.080	.160	.239	.319	.399	.479	.558	.638	.718	.798
40	2.079	4.159	6.238	8.318	10.397	12.477	14.556	16.636	18.715	20.795
41	.079	.159	.237	.317	.395	.476	.554	.634	.712	.792
42	.079	.158	.237	.316	.394	.474	.552	.632	.710	.789
43	.079	.157	.236	.315	.392	.472	.550	.629	.707	.786
44	.078	.157	.235	.313	.390	.471	.548	.627	.704	.784
45	.078	.156	.234	.312	.389	.469	.546	.625	.702	.781
46	.078	.156	.233	.311	.387	.467	.544	.622	.699	.778
47	.078	.155	.232	.310	.386	.466	.542	.620	.697	.775
48	.077	.154	.232	.308	.385	.464	.540	.618	.694	.772
49	.077	.154	.231	.307	.384	.462	.538	.615	.692	.769
50	2.077	4.153	6.230	8.306	10.383	12.460	14.536	16.613	18.689	20.766
51	.076	.153	.229	.305	.382	.458	.534	.611	.686	.763
52	.076	.152	.228	.304	.380	.457	.532	.609	.684	.760
53	.076	.152	.227	.303	.379	.455	.530	.606	.681	.758
54	.076	.151	.226	.302	.378	.453	.528	.604	.679	.755
55	.075	.151	.225	.301	.377	.452	.527	.602	.676	.752
56	.075	.150	.225	.299	.375	.450	.525	.599	.674	.749
57	.075	.150	.224	.298	.373	.448	.523	.597	.671	.747
58	.074	.149	.223	.297	.372	.447	.521	.595	.669	.744
59	.074	.149	.222	.296	.370	.445	.519	.593	.667	.741
60	2.074	4.148	6.221	8.295	10.369	12.443	14.517	16.590	18.664	20.738

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.000
3	.001
4	.002
5	.003
6	.005
7	.006
8	.008
9	.010
10	.013

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.294
2	4.589
3	6.883
4	9.178
5	11.472
6	13.766
7	16.061
8	18.355
9	20.650
10	22.944

TABLE X.—*Co-ordinates for projection of maps. Scale* $\frac{1}{31680}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
26 00	2.074	4.148	6.221	8.295	10.369	12.443	14.517	16.590	18.664	20.738
1	.074	.148	.220	.294	.368	.441	.515	.588	.661	.735
2	.074	.147	.219	.292	.366	.439	.513	.585	.658	.732
3	.073	.147	.218	.291	.365	.438	.511	.583	.656	.729
4	.073	.146	.217	.290	.363	.436	.509	.581	.653	.726
5	.073	.146	.216	.289	.362	.434	.506	.578	.650	.723
6	.073	.145	.215	.288	.360	.432	.504	.576	.648	.720
7	.072	.145	.214	.286	.359	.430	.502	.573	.645	.717
8	.072	.144	.213	.285	.357	.429	.500	.571	.642	.714
9	.072	.143	.213	.284	.355	.427	.498	.568	.640	.711
10	2.071	4.142	6.212	8.283	10.354	12.425	14.496	16.566	18.637	20.708
11	.071	.142	.211	.282	.352	.423	.494	.563	.634	.705
12	.071	.141	.210	.280	.351	.421	.492	.560	.631	.702
13	.070	.141	.209	.279	.349	.420	.490	.558	.629	.699
14	.070	.140	.208	.278	.348	.418	.487	.555	.626	.696
15	.070	.139	.207	.277	.346	.416	.485	.553	.623	.693
16	.069	.139	.206	.275	.345	.415	.483	.551	.621	.690
17	.069	.138	.205	.274	.343	.413	.481	.549	.618	.687
18	.069	.138	.204	.273	.342	.411	.479	.546	.615	.684
19	.068	.137	.203	.272	.340	.409	.477	.544	.612	.681
20	2.068	4.136	6.203	8.271	10.339	12.407	14.475	16.542	18.610	20.678
21	.068	.136	.202	.270	.337	.405	.473	.540	.607	.675
22	.068	.135	.201	.268	.336	.403	.471	.537	.604	.672
23	.067	.135	.200	.267	.335	.402	.469	.535	.602	.669
24	.067	.134	.199	.266	.333	.400	.466	.532	.599	.666
25	.067	.133	.199	.265	.332	.398	.464	.530	.596	.663
26	.066	.132	.198	.264	.330	.397	.462	.527	.593	.660
27	.066	.132	.197	.263	.329	.395	.460	.525	.591	.657
28	.066	.131	.196	.262	.327	.393	.458	.522	.588	.654
29	.065	.131	.195	.260	.326	.391	.456	.520	.585	.651
30	2.065	4.130	6.194	8.259	10.324	12.389	14.454	16.518	18.583	20.648
31	.065	.130	.193	.258	.323	.387	.452	.516	.580	.645
32	.065	.129	.192	.257	.321	.385	.450	.513	.577	.642
33	.064	.128	.191	.256	.320	.384	.448	.511	.575	.639
34	.064	.128	.190	.254	.318	.382	.446	.509	.572	.636
35	.064	.127	.189	.253	.317	.380	.443	.506	.569	.633
36	.063	.127	.188	.252	.315	.379	.441	.504	.567	.630
37	.063	.126	.187	.251	.314	.377	.439	.501	.564	.627
38	.063	.126	.187	.250	.312	.375	.437	.499	.561	.624
39	.062	.125	.186	.248	.311	.373	.435	.496	.559	.621
40	2.062	4.124	6.185	8.247	10.309	12.371	14.433	16.494	18.556	20.618
41	.062	.124	.184	.246	.308	.369	.431	.492	.553	.615
42	.062	.123	.183	.245	.306	.367	.429	.489	.550	.612
43	.061	.123	.182	.544	.305	.366	.427	.487	.548	.609
44	.061	.122	.181	.242	.303	.364	.425	.484	.545	.606
45	.061	.121	.180	.241	.302	.362	.423	.481	.542	.603
46	.060	.120	.179	.240	.300	.360	.421	.479	.540	.600
47	.060	.120	.178	.239	.299	.358	.418	.477	.537	.597
48	.060	.119	.177	.238	.297	.357	.416	.475	.534	.594
49	.059	.119	.177	.236	.296	.355	.414	.472	.532	.591
50	2.059	4.118	6.176	8.235	10.294	12.353	14.412	16.470	18.529	20.588
51	.059	.118	.175	.234	.293	.351	.410	.468	.526	.585
52	.059	.117	.174	.233	.291	.349	.408	.466	.524	.582
53	.058	.117	.173	.232	.290	.348	.406	.463	.521	.579
54	.058	.116	.173	.231	.288	.346	.404	.461	.519	.576
55	.058	.115	.172	.230	.287	.345	.402	.459	.516	.573
56	.057	.115	.171	.229	.285	.343	.399	.457	.514	.570
57	.057	.114	.170	.228	.284	.341	.397	.454	.511	.567
58	.057	.113	.170	.227	.282	.339	.395	.452	.508	.564
59	.056	.113	.168	.226	.281	.337	.393	.449	.506	.561
60	2.056	4.112	6.168	8.224	10.280	12.335	14.391	16.447	18.503	20.559

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.000
3	.001
4	.002
5	.003
6	.005
7	.006
8	.008
9	.011
10	.013

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.295
2	4.590
3	6.884
4	9.179
5	11.474
6	13.769
7	16.064
8	18.358
9	20.653
10	22.948

TABLE X.—*Co-ordinates for projection of maps. Scale $\frac{1}{31680}$.*

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
27 00	2.056	4.112	6.168	8.224	10.280	12.335	14.391	16.447	18.503	20.559
1	.056	.112	.167	.223	.278	.333	.389	.445	.500	.556
2	.056	.111	.166	.222	.277	.331	.387	.442	.497	.553
3	.055	.111	.165	.220	.275	.330	.385	.440	.495	.550
4	.055	.110	.164	.219	.274	.328	.383	.437	.492	.547
5	.055	.109	.163	.218	.272	.326	.381	.435	.489	.544
6	.054	.109	.162	.216	.271	.325	.379	.432	.487	.541
7	.054	.108	.161	.215	.269	.323	.377	.430	.484	.538
8	.054	.107	.160	.214	.267	.321	.375	.427	.481	.535
9	.053	.107	.159	.213	.265	.319	.373	.425	.478	.532
10	2.053	4.106	6.158	8.211	10.264	12.317	14.370	16.422	18.475	20.528
11	.053	.106	.157	.210	.262	.315	.368	.420	.472	.525
12	.053	.105	.156	.209	.261	.314	.366	.417	.469	.522
13	.052	.104	.155	.207	.259	.312	.364	.415	.467	.519
14	.052	.104	.154	.206	.258	.311	.362	.412	.464	.516
15	.052	.103	.153	.205	.256	.309	.359	.410	.461	.513
16	.051	.102	.152	.204	.255	.307	.357	.407	.458	.510
17	.051	.101	.151	.202	.254	.305	.355	.405	.456	.507
18	.051	.101	.150	.201	.252	.303	.353	.403	.453	.504
19	.050	.100	.150	.200	.250	.300	.351	.400	.450	.501
20	2.050	4.099	6.149	8.199	10.248	12.298	14.348	16.398	18.447	20.497
21	.050	.099	.148	.198	.247	.296	.346	.395	.444	.494
22	.050	.098	.147	.196	.245	.295	.344	.393	.442	.491
23	.049	.098	.146	.195	.244	.293	.341	.390	.439	.488
24	.049	.097	.145	.194	.242	.291	.339	.388	.436	.485
25	.049	.096	.144	.192	.241	.289	.337	.385	.433	.482
26	.048	.096	.143	.191	.239	.288	.335	.383	.430	.479
27	.048	.095	.142	.189	.238	.286	.332	.380	.428	.476
28	.048	.094	.141	.188	.236	.284	.330	.378	.425	.473
29	.047	.094	.141	.187	.235	.282	.328	.375	.422	.469
30	2.047	4.093	6.140	8.186	10.233	12.280	14.326	16.373	18.419	20.466
31	.047	.093	.139	.185	.232	.278	.324	.370	.416	.463
32	.046	.092	.138	.184	.230	.276	.322	.368	.413	.460
33	.046	.091	.137	.182	.229	.274	.319	.365	.411	.457
34	.046	.091	.136	.181	.228	.272	.317	.363	.408	.454
35	.045	.090	.135	.180	.226	.271	.315	.360	.405	.451
36	.045	.089	.134	.178	.225	.269	.313	.358	.402	.448
37	.044	.089	.133	.177	.224	.267	.310	.355	.400	.445
38	.044	.088	.132	.176	.222	.265	.308	.353	.397	.442
39	.044	.088	.131	.175	.220	.263	.306	.350	.394	.438
40	2.043	4.087	6.130	8.174	10.217	12.261	14.304	16.348	18.391	20.435
41	.043	.087	.129	.173	.216	.259	.302	.345	.388	.432
42	.043	.086	.128	.172	.214	.257	.300	.343	.386	.429
43	.042	.085	.127	.170	.213	.256	.298	.340	.383	.426
44	.042	.085	.126	.169	.211	.254	.296	.338	.380	.423
45	.042	.084	.125	.168	.210	.252	.294	.335	.378	.420
46	.041	.084	.124	.166	.208	.250	.292	.333	.375	.417
47	.041	.083	.123	.165	.207	.248	.290	.330	.372	.414
48	.041	.082	.122	.164	.205	.246	.287	.328	.369	.411
49	.040	.082	.122	.163	.204	.244	.285	.325	.367	.407
50	2.040	4.081	6.121	8.162	10.202	12.242	14.283	16.323	18.364	20.404
51	.040	.081	.120	.161	.201	.240	.281	.320	.361	.401
52	.040	.080	.119	.160	.199	.238	.279	.318	.359	.398
53	.039	.079	.118	.158	.198	.237	.277	.315	.356	.395
54	.039	.079	.117	.157	.196	.235	.275	.313	.354	.392
55	.039	.078	.116	.156	.195	.233	.272	.311	.351	.389
56	.038	.077	.115	.154	.193	.231	.270	.308	.348	.386
57	.038	.077	.114	.153	.192	.230	.268	.306	.345	.383
58	.038	.076	.113	.152	.190	.228	.266	.303	.342	.380
59	.037	.075	.113	.151	.189	.226	.264	.301	.340	.377
60	2.037	4.075	6.112	8.150	10.187	12.224	14.262	16.299	18.337	20.374

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.000
3	.001
4	.002
5	.003
6	.005
7	.007
8	.009
9	.011
10	.013

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.295
2	4.590
3	6.885
4	9.180
5	11.475
6	13.771
7	16.066
8	18.361
9	20.656
10	22.951

TABLE X.—*Co-ordinates for projection of maps. Scale* $\frac{1}{316800}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
28 00	2.037	4.075	6.112	8.150	10.187	12.224	14.262	16.299	18.337	20.374
1	.037	.074	.111	.149	.185	.222	.259	.297	.334	.371
2	.037	.073	.110	.148	.184	.220	.257	.294	.331	.368
3	.036	.073	.109	.146	.183	.218	.255	.292	.328	.366
4	.036	.072	.108	.145	.181	.216	.252	.289	.325	.363
5	.036	.071	.108	.144	.180	.214	.250	.287	.322	.360
6	.035	.070	.107	.142	.178	.212	.247	.284	.319	.356
7	.035	.070	.106	.141	.177	.210	.245	.282	.316	.352
8	.035	.069	.105	.139	.175	.208	.243	.279	.313	.349
9	.034	.068	.104	.138	.173	.206	.241	.277	.310	.346
10	2.034	4.068	6.103	8.137	10.171	12.205	14.239	16.274	18.308	20.342
11	.034	.067	.102	.136	.170	.203	.237	.272	.305	.339
12	.034	.067	.101	.134	.168	.201	.234	.269	.302	.336
13	.033	.066	.100	.133	.167	.199	.232	.267	.299	.332
14	.033	.065	.099	.132	.165	.197	.230	.264	.296	.329
15	.033	.065	.098	.130	.164	.195	.228	.262	.293	.326
16	.032	.064	.097	.129	.162	.193	.225	.259	.290	.322
17	.032	.064	.096	.128	.161	.191	.223	.257	.287	.319
18	.032	.063	.095	.127	.159	.189	.221	.254	.284	.316
19	.031	.063	.094	.125	.157	.187	.219	.251	.281	.313
20	2.031	4.062	6.093	8.124	10.155	12.186	14.217	16.248	18.279	20.310
21	.031	.062	.092	.123	.154	.184	.215	.246	.276	.307
22	.031	.061	.091	.122	.152	.182	.212	.243	.273	.304
23	.030	.061	.090	.120	.151	.180	.210	.241	.270	.300
24	.030	.060	.089	.118	.149	.178	.208	.239	.267	.297
25	.030	.060	.088	.117	.148	.176	.206	.236	.264	.294
26	.029	.059	.087	.116	.146	.174	.203	.233	.261	.291
27	.029	.058	.086	.115	.145	.172	.201	.230	.258	.287
28	.029	.058	.085	.113	.143	.170	.199	.228	.255	.284
29	.028	.057	.084	.112	.141	.168	.197	.225	.252	.281
30	2.028	4.056	6.083	8.111	10.139	12.167	14.195	16.222	18.250	20.278
31	.028	.056	.082	.110	.138	.165	.193	.220	.247	.275
32	.028	.055	.081	.108	.136	.163	.190	.217	.244	.272
33	.027	.054	.080	.107	.135	.161	.188	.215	.241	.269
34	.027	.054	.079	.106	.133	.159	.186	.212	.238	.265
35	.027	.053	.079	.104	.132	.157	.183	.210	.235	.262
36	.026	.053	.078	.103	.130	.155	.181	.207	.232	.259
37	.026	.052	.077	.102	.128	.153	.179	.205	.229	.256
38	.026	.051	.076	.100	.127	.151	.176	.202	.226	.253
39	.025	.050	.075	.099	.125	.149	.174	.199	.223	.249
40	2.025	4.049	6.074	8.098	10.123	12.147	14.172	16.197	18.221	20.246
41	.025	.049	.073	.097	.121	.145	.170	.194	.218	.243
42	.025	.048	.072	.095	.120	.143	.168	.192	.215	.240
43	.024	.048	.071	.094	.118	.141	.166	.189	.212	.236
44	.024	.047	.070	.093	.117	.139	.164	.187	.209	.233
45	.024	.046	.069	.092	.116	.137	.162	.184	.206	.230
46	.023	.046	.068	.090	.114	.135	.159	.182	.203	.626
47	.023	.045	.067	.089	.113	.133	.157	.179	.200	.223
48	.022	.044	.066	.088	.111	.131	.155	.176	.197	.220
49	.022	.044	.065	.087	.109	.129	.153	.174	.195	.217
50	2.021	4.043	6.064	8.086	10.107	12.128	14.150	16.171	18.193	20.214
51	.021	.043	.063	.084	.106	.126	.148	.169	.190	.211
52	.021	.042	.062	.083	.104	.125	.146	.166	.187	.208
53	.020	.042	.061	.082	.103	.123	.143	.164	.185	.205
54	.020	.041	.060	.080	.101	.121	.141	.161	.182	.202
55	.020	.040	.059	.079	.100	.119	.139	.159	.179	.199
56	.019	.040	.058	.078	.098	.117	.137	.156	.176	.196
57	.019	.039	.058	.076	.097	.115	.134	.154	.173	.193
58	.019	.038	.057	.075	.095	.113	.132	.151	.170	.190
59	.018	.038	.056	.074	.093	.111	.130	.149	.167	.187
60	2.018	4.037	6.055	8.073	10.091	12.110	14.128	16.146	18.165	20.183

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.000
3	.001
4	.002
5	.003
6	.005
7	.007
8	.009
9	.011
10	.014

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.295
2	4.591
3	6.886
4	9.182
5	11.477
6	13.772
7	16.068
8	18.363
9	20.659
10	22.954

TABLE X.—*Co-ordinates for projection of maps. Scale* $\frac{1}{31680}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
29 00	2.018	4.037	6.055	8.073	10.091	12.110	14.128	16.146	18.165	20.183
1	.018	.037	.054	.072	.090	.108	.126	.144	.162	.180
2	.018	.036	.053	.071	.088	.106	.123	.141	.159	.177
3	.017	.036	.052	.069	.087	.104	.121	.139	.156	.173
4	.017	.035	.051	.068	.085	.102	.118	.136	.153	.170
5	.017	.035	.050	.066	.084	.100	.115	.134	.150	.167
6	.016	.034	.049	.065	.082	.098	.113	.131	.147	.164
7	.016	.033	.048	.064	.081	.096	.110	.129	.144	.161
8	.016	.032	.047	.062	.079	.094	.108	.126	.141	.157
9	.015	.031	.046	.061	.077	.092	.106	.123	.138	.154
10	2.015	4.030	6.045	8.060	10.075	12.090	14.105	16.120	18.135	20.150
11	.015	.030	.044	.058	.074	.088	.103	.118	.132	.147
12	.015	.029	.043	.057	.072	.086	.100	.115	.129	.144
13	.014	.028	.042	.056	.071	.084	.098	.113	.126	.140
14	.014	.028	.041	.054	.069	.082	.095	.110	.123	.137
15	.014	.027	.040	.053	.067	.080	.092	.108	.120	.134
16	.013	.026	.039	.052	.066	.078	.090	.105	.117	.130
17	.013	.026	.038	.050	.064	.076	.087	.102	.114	.127
18	.013	.025	.037	.049	.062	.074	.085	.100	.111	.124
19	.012	.024	.036	.048	.060	.072	.084	.097	.108	.120
20	2.012	4.023	6.035	8.047	10.058	12.070	14.082	16.094	18.105	20.117
21	.012	.023	.034	.045	.057	.068	.079	.092	.102	.114
22	.011	.022	.033	.044	.055	.066	.077	.089	.099	.110
23	.011	.022	.032	.043	.054	.064	.074	.086	.096	.107
24	.011	.021	.031	.041	.052	.062	.072	.084	.093	.104
25	.010	.020	.030	.040	.050	.060	.069	.081	.090	.100
26	.010	.019	.029	.039	.049	.058	.067	.079	.087	.097
27	.010	.019	.028	.037	.047	.056	.065	.076	.084	.094
28	.009	.018	.027	.036	.045	.054	.063	.073	.081	.090
29	.009	.018	.026	.035	.044	.052	.060	.070	.078	.087
30	2.008	4.017	6.025	8.034	10.042	12.050	14.058	16.067	18.076	20.084
31	.008	.017	.024	.032	.041	.048	.056	.065	.073	.081
32	.008	.016	.023	.031	.039	.046	.053	.062	.070	.077
33	.007	.016	.022	.030	.037	.044	.051	.060	.067	.074
34	.007	.015	.021	.028	.036	.042	.049	.058	.064	.071
35	.007	.014	.020	.027	.034	.040	.047	.055	.061	.067
36	.006	.014	.019	.026	.033	.038	.044	.053	.058	.064
37	.006	.013	.018	.024	.031	.036	.042	.050	.055	.061
38	.006	.012	.017	.023	.029	.035	.040	.047	.052	.058
39	.005	.011	.016	.021	.027	.033	.038	.044	.049	.054
40	2.005	4.010	6.015	8.020	10.025	12.031	14.036	16.041	18.046	20.051
41	.005	.010	.014	.019	.023	.029	.033	.039	.043	.048
42	.005	.009	.013	.017	.022	.027	.031	.036	.040	.044
43	.004	.009	.012	.016	.020	.025	.029	.033	.037	.041
44	.004	.008	.011	.015	.019	.023	.027	.031	.034	.038
45	.004	.008	.010	.013	.018	.021	.024	.028	.031	.034
46	.003	.007	.009	.012	.016	.019	.022	.026	.028	.031
47	.003	.006	.008	.011	.014	.017	.020	.023	.025	.028
48	.003	.005	.007	.010	.012	.015	.017	.020	.022	.024
49	.002	.005	.006	.009	.011	.013	.015	.017	.019	.021
50	2.002	4.004	6.005	8.007	10.009	12.011	14.013	16.014	18.016	20.018
51	.002	.004	.004	.006	.007	.009	.010	.012	.013	.014
52	.002	.003	.003	.005	.006	.007	.008	.009	.010	.010
53	.001	.002	.002	.003	.004	.005	.006	.007	.007	.007
54	.001	.002	.001	.002	.003	.003	.003	.004	.004	.004
55	.001	.001	.000	.001	.001	.001	.001	.002	.001	.001
56	.000	.001	5.999	7.999	9.999	11.999	13.999	15.999	17.998	19.997
57	.000	.000	.998	.998	.998	.997	.996	.997	.995	.994
58	.000	3.999	.997	.997	.996	.995	.993	.994	.992	.991
59	1.999	3.998	.996	.995	.994	.993	.991	.991	.989	.988
60	1.999	3.997	5.995	7.994	9.992	11.991	13.989	15.988	17.986	19.985

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.002
5	.004
6	.005
7	.007
8	.009
9	.011
10	.014

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.296
2	4.592
3	6.887
4	9.183
5	11.479
6	13.775
7	16.071
8	18.366
9	20.662
10	22.958

TABLE X.—*Co-ordinates for projection of maps. Scale $\frac{1}{31680}$.*

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
30 00	1.999	3.997	5.995	7.994	9.992	11.991	13.989	15.988	17.986	19.985
1	.999	.996	.994	.993	.990	.989	.987	.985	.983	.982
2	.998	.995	.993	.991	.989	.987	.985	.982	.980	.978
3	.998	.995	.992	.990	.987	.985	.982	.980	.977	.975
4	.997	.994	.991	.988	.985	.983	.980	.977	.974	.971
5	.997	.993	.990	.987	.984	.981	.978	.974	.971	.968
6	.996	.992	.989	.985	.982	.979	.975	.972	.968	.965
7	.996	.992	.988	.984	.981	.977	.973	.969	.965	.961
8	.996	.991	.987	.983	.979	.975	.970	.966	.962	.958
9	.995	.991	.986	.981	.977	.973	.968	.964	.959	.954
10	1.995	3.990	5.985	7.980	9.975	11.971	13.966	15.961	17.956	19.951
11	.995	.989	.984	.978	.974	.969	.963	.959	.953	.948
12	.994	.989	.983	.977	.972	.967	.961	.956	.950	.944
13	.994	.988	.982	.976	.970	.965	.958	.954	.947	.941
14	.994	.987	.981	.974	.969	.963	.956	.951	.944	.938
15	.994	.986	.980	.973	.967	.961	.953	.949	.941	.934
16	.993	.986	.979	.971	.965	.959	.951	.946	.938	.931
17	.993	.985	.978	.970	.964	.957	.948	.943	.935	.927
18	.993	.984	.977	.969	.962	.955	.946	.940	.932	.924
19	.992	.984	.976	.968	.960	.953	.944	.937	.928	.921
20	1.992	3.983	5.975	7.967	9.958	11.950	13.942	15.934	17.925	19.917
21	.992	.982	.974	.965	.957	.948	.939	.932	.922	.914
22	.991	.982	.973	.964	.955	.946	.937	.929	.919	.910
23	.991	.981	.972	.962	.953	.944	.934	.926	.916	.907
24	.990	.981	.971	.961	.952	.942	.932	.923	.913	.904
25	.990	.980	.970	.959	.950	.940	.929	.920	.910	.901
26	.990	.979	.969	.958	.948	.938	.927	.918	.907	.898
27	.989	.979	.968	.957	.947	.936	.924	.915	.904	.894
28	.989	.978	.967	.955	.945	.934	.922	.912	.901	.891
29	.989	.978	.966	.954	.943	.932	.920	.909	.898	.887
30	1.988	3.977	5.965	7.953	9.941	11.930	13.918	15.906	17.895	19.883
31	.988	.976	.964	.951	.940	.928	.915	.904	.892	.880
32	.988	.976	.963	.950	.938	.926	.913	.901	.889	.876
33	.987	.975	.962	.948	.936	.924	.910	.898	.886	.873
34	.987	.974	.961	.947	.935	.922	.908	.895	.883	.869
35	.987	.974	.960	.945	.933	.920	.905	.893	.880	.866
36	.987	.973	.959	.944	.931	.918	.903	.890	.877	.862
37	.986	.972	.958	.943	.930	.916	.900	.888	.874	.859
38	.986	.972	.957	.942	.928	.614	.898	.885	.871	.856
39	.986	.971	.956	.941	.926	.912	.896	.882	.867	.852
40	1.985	3.970	5.955	7.940	9.924	11.909	13.894	15.879	17.864	19.849
41	.985	.970	.954	.938	.923	.907	.891	.877	.861	.845
42	.985	.969	.953	.937	.921	.905	.889	.874	.858	.842
43	.984	.968	.952	.935	.919	.903	.886	.871	.855	.838
44	.984	.968	.951	.934	.918	.901	.884	.869	.852	.835
45	.984	.967	.950	.933	.916	.899	.881	.867	.849	.831
46	.983	.966	.949	.932	.915	.897	.879	.864	.846	.828
47	.983	.966	.948	.930	.913	.895	.876	.861	.843	.824
48	.983	.965	.947	.929	.911	.893	.874	.858	.840	.821
49	.982	.964	.946	.928	.909	.891	.872	.855	.836	.818
50	1.982	3.963	5.945	7.926	9.907	11.889	13.870	15.852	17.833	19.815
51	.982	.963	.944	.925	.906	.887	.867	.850	.830	.812
52	.981	.962	.943	.924	.904	.885	.865	.847	.827	.808
53	.981	.961	.942	.922	.902	.883	.862	.844	.824	.805
54	.981	.961	.941	.921	.901	.881	.860	.842	.821	.802
55	.980	.960	.940	.920	.899	.879	.857	.839	.818	.798
56	.980	.959	.939	.918	.897	.877	.855	.837	.815	.795
57	.380	.959	.938	.917	.895	.875	.853	.834	.812	.792
58	.979	.958	.937	.916	.894	.873	.851	.831	.809	.788
59	.979	.957	.936	.914	.892	.871	.849	.829	.807	.785
60	1.978	3.956	5.935	7.913	9.891	11.869	13.847	15.826	17.804	19.782

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.002
5	.004
6	.005
7	.007
8	.009
9	.012
10	.014

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.296
2	4.592
3	6.888
4	9.184
5	11.480
6	13.777
7	16.073
8	18.369
9	20.665
10	22.961

TABLE X.—*Co-ordinates for projection of maps. Scale* $\frac{1}{31680}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
31 00	1.978	3.956	5.935	7.913	9.891	11.869	13.847	15.826	17.804	19.782
1	.978	.955	.934	.912	.889	.867	.845	.823	.801	.779
2	.978	.954	.933	.910	.887	.865	.842	.820	.798	.775
3	.977	.954	.932	.909	.886	.863	.840	.818	.795	.772
4	.977	.953	.931	.908	.884	.861	.837	.815	.791	.768
5	.977	.953	.930	.906	.882	.859	.835	.812	.788	.765
6	.976	.952	.928	.905	.880	.857	.832	.810	.785	.761
7	.976	.951	.927	.903	.879	.855	.830	.807	.782	.758
8	.976	.950	.926	.902	.877	.853	.827	.804	.778	.754
9	.975	.950	.925	.900	.875	.851	.825	.801	.775	.751
10	1.975	3.949	5.924	7.899	9.873	11.848	13.823	15.798	17.772	19.747
11	.975	.948	.923	.897	.871	.846	.820	.795	.769	.743
12	.974	.948	.922	.896	.869	.844	.818	.793	.765	.740
13	.974	.947	.921	.894	.868	.842	.816	.791	.762	.736
14	.974	.946	.920	.893	.866	.840	.813	.788	.759	.733
15	.973	.946	.919	.891	.864	.838	.811	.785	.756	.729
16	.973	.945	.918	.890	.862	.836	.809	.782	.753	.726
17	.972	.945	.917	.889	.861	.834	.806	.779	.750	.723
18	.972	.944	.916	.887	.859	.832	.803	.776	.747	.719
19	.972	.943	.915	.886	.858	.830	.801	.773	.744	.716
20	1.971	3.942	5.914	7.885	9.856	11.827	13.798	15.770	17.741	19.712
21	.971	.942	.913	.883	.854	.825	.796	.768	.738	.709
22	.971	.941	.912	.882	.853	.823	.793	.765	.735	.705
23	.970	.941	.911	.880	.851	.821	.791	.762	.732	.702
24	.970	.940	.910	.879	.849	.819	.788	.759	.728	.698
25	.970	.940	.909	.877	.848	.817	.785	.756	.725	.695
26	.969	.939	.908	.876	.846	.815	.783	.754	.722	.691
27	.969	.938	.906	.875	.844	.813	.781	.751	.718	.688
28	.969	.937	.905	.874	.842	.811	.778	.748	.715	.685
29	.968	.936	.904	.872	.840	.808	.776	.745	.712	.681
30	1.968	3.935	5.903	7.871	9.838	11.806	13.774	15.742	17.709	19.677
31	.968	.935	.902	.870	.836	.804	.771	.739	.706	.673
32	.968	.934	.901	.869	.835	.802	.769	.736	.703	.670
33	.967	.933	.900	.867	.833	.800	.766	.734	.700	.666
34	.967	.933	.899	.866	.831	.798	.764	.731	.696	.663
35	.967	.932	.898	.864	.830	.796	.761	.728	.693	.659
36	.966	.932	.897	.863	.828	.794	.759	.725	.690	.656
37	.966	.931	.896	.861	.826	.792	.756	.723	.687	.652
38	.965	.930	.895	.860	.825	.790	.754	.720	.684	.649
39	.965	.929	.894	.858	.823	.788	.751	.717	.681	.645
40	1.964	3.928	5.893	7.857	9.821	11.785	13.749	15.714	17.678	19.642
41	.964	.928	.892	.855	.819	.783	.746	.711	.675	.638
42	.964	.927	.891	.854	.818	.781	.744	.709	.672	.635
43	.963	.926	.890	.852	.816	.779	.741	.706	.669	.631
44	.963	.926	.889	.851	.814	.777	.739	.703	.665	.628
45	.963	.925	.888	.849	.813	.775	.736	.701	.662	.624
46	.962	.924	.887	.847	.811	.773	.734	.698	.659	.621
47	.962	.923	.886	.846	.809	.771	.731	.695	.656	.617
48	.962	.922	.884	.845	.807	.769	.729	.692	.653	.614
49	.961	.922	.883	.844	.805	.766	.727	.689	.650	.610
50	1.961	3.921	5.882	7.843	9.803	11.764	13.725	15.686	17.646	19.607
51	.961	.921	.881	.841	.801	.762	.722	.684	.643	.603
52	.960	.920	.880	.840	.800	.760	.720	.681	.640	.600
53	.960	.920	.879	.839	.798	.758	.717	.679	.637	.596
54	.960	.919	.878	.837	.796	.756	.714	.676	.634	.593
55	.959	.919	.877	.836	.794	.754	.712	.673	.631	.589
56	.959	.918	.876	.835	.793	.752	.710	.670	.628	.586
57	.958	.917	.875	.833	.791	.750	.707	.667	.625	.582
58	.958	.916	.874	.831	.789	.748	.705	.664	.622	.579
59	.958	.916	.873	.830	.787	.746	.703	.661	.619	.576
60	1.957	3.915	5.872	7.829	9.786	11.744	13.701	15.658	17.616	19.573

Longitude interval.	Ordinate of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.002
5	.004
6	.005
7	.007
8	.009
9	.012
10	.015

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.296
2	4.593
3	6.889
4	9.186
5	11.482
6	13.779
7	16.075
8	18.372
9	20.668
10	22.965

TABLE X.—*Co-ordinates for projection of maps. Scale* $\frac{1}{31680}$.

[Derivation of table explained in section (5) use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
32 00	1.957	3.915	5.872	7.829	9.786	11.744	13.701	15.658	17.616	19.573
1	.957	.914	.871	.828	.784	.742	.698	.655	.613	.570
2	.957	.913	.870	.826	.782	.740	.696	.652	.610	.566
3	.956	.912	.869	.825	.781	.737	.693	.650	.606	.563
4	.956	.912	.868	.823	.779	.735	.691	.647	.603	.559
5	.956	.911	.867	.822	.777	.733	.688	.644	.600	.556
6	.955	.910	.866	.820	.776	.731	.686	.641	.597	.552
7	.955	.909	.865	.819	.774	.728	.683	.639	.593	.549
8	.955	.908	.864	.817	.772	.726	.681	.636	.590	.545
9	.954	.908	.863	.816	.770	.724	.679	.633	.587	.541
10	1.954	3.907	5.861	7.815	9.768	11.722	13.676	15.630	17.583	19.537
11	.954	.906	.860	.813	.767	.720	.674	.627	.580	.534
12	.953	.905	.859	.812	.765	.718	.671	.624	.577	.530
13	.953	.905	.858	.810	.763	.716	.669	.621	.574	.527
14	.953	.904	.857	.808	.762	.714	.666	.618	.570	.524
15	.952	.904	.856	.807	.760	.712	.664	.615	.567	.520
16	.952	.903	.855	.805	.758	.710	.661	.612	.564	.516
17	.952	.902	.854	.804	.756	.708	.659	.609	.561	.513
18	.951	.901	.853	.802	.754	.706	.656	.606	.558	.509
19	.951	.901	.852	.801	.752	.704	.654	.604	.554	.505
20	1.950	3.900	5.850	7.800	9.750	11.701	13.651	15.601	17.551	19.501
21	.950	.899	.849	.798	.748	.699	.649	.598	.548	.498
22	.949	.898	.848	.797	.747	.697	.646	.595	.544	.494
23	.949	.898	.847	.795	.745	.694	.644	.592	.541	.491
24	.949	.897	.846	.794	.743	.692	.641	.589	.538	.487
25	.948	.896	.845	.793	.742	.690	.639	.586	.535	.483
26	.948	.895	.844	.792	.740	.688	.636	.583	.531	.480
27	.947	.895	.843	.790	.738	.686	.634	.580	.528	.476
28	.947	.894	.842	.788	.736	.683	.631	.577	.525	.473
29	.947	.893	.840	.787	.734	.681	.628	.575	.521	.469
30	1.946	3.893	5.839	7.786	9.732	11.679	13.625	15.572	17.518	19.465
31	.946	.892	.838	.784	.731	.677	.623	.569	.515	.462
32	.946	.891	.837	.783	.730	.675	.620	.566	.511	.458
33	.945	.891	.836	.781	.728	.673	.618	.563	.508	.455
34	.945	.890	.835	.780	.726	.670	.615	.560	.505	.451
35	.945	.889	.834	.778	.725	.668	.613	.557	.502	.447
36	.944	.888	.833	.777	.723	.666	.610	.554	.498	.444
37	.944	.888	.832	.775	.721	.664	.608	.551	.495	.440
38	.944	.887	.831	.774	.719	.662	.605	.548	.492	.436
39	.943	.886	.830	.773	.717	.660	.603	.546	.489	.433
40	1.943	3.886	5.829	7.772	9.714	11.657	13.600	15.543	17.486	19.429
41	.943	.885	.828	.770	.712	.655	.598	.540	.483	.426
42	.942	.884	.827	.769	.711	.653	.595	.537	.479	.422
43	.942	.884	.826	.767	.709	.651	.593	.534	.476	.419
44	.942	.883	.825	.766	.707	.649	.592	.531	.472	.415
45	.941	.882	.824	.765	.705	.647	.590	.528	.468	.411
46	.941	.882	.823	.763	.703	.645	.587	.525	.465	.408
47	.940	.881	.822	.762	.702	.643	.585	.522	.462	.404
48	.940	.880	.821	.760	.700	.641	.582	.519	.459	.401
49	.940	.879	.820	.759	.698	.638	.578	.517	.457	.397
50	1.939	3.879	5.818	7.757	9.696	11.636	13.575	15.514	17.454	19.393
51	.939	.878	.817	.756	.694	.633	.573	.511	.451	.390
52	.939	.877	.816	.754	.693	.631	.570	.508	.448	.386
53	.938	.877	.815	.753	.691	.629	.568	.505	.444	.383
54	.938	.876	.814	.751	.689	.627	.565	.503	.441	.379
55	.938	.875	.813	.750	.687	.625	.563	.500	.438	.376
56	.937	.875	.812	.748	.685	.623	.560	.497	.434	.372
57	.937	.874	.811	.747	.683	.621	.558	.494	.431	.369
58	.937	.873	.810	.745	.681	.618	.555	.491	.428	.365
59	.936	.872	.808	.744	.680	.616	.553	.488	.424	.361
60	1.936	3.871	5.807	7.743	9.678	11.614	13.550	15.486	17.421	19.357

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.002
5	.004
6	.005
7	.007
8	.010
9	.012
10	.015

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.297
2	4.594
3	6.891
4	9.188
5	11.484
6	13.781
7	16.078
8	18.375
9	20.672
10	22.969

TABLE X.—*Co-ordinates for projection of maps. Scale* $\frac{1}{31680}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
33 00	1.936	3.871	5.807	7.743	9.678	11.614	13.550	15.486	17.421	19.357
1	.936	.870	.806	.741	.676	.612	.547	.483	.418	.353
2	.936	.869	.805	.740	.674	.610	.545	.480	.415	.349
3	.935	.869	.804	.738	.673	.607	.542	.477	.411	.346
4	.935	.868	.803	.737	.671	.605	.540	.474	.408	.343
5	.934	.867	.801	.735	.669	.603	.537	.471	.405	.339
6	.934	.867	.800	.734	.667	.601	.534	.468	.401	.335
7	.933	.866	.799	.732	.665	.598	.532	.465	.398	.332
8	.933	.865	.798	.731	.664	.596	.529	.462	.395	.328
9	.932	.865	.797	.729	.662	.594	.527	.459	.392	.324
10	1.932	3.864	5.796	7.728	9.660	11.592	13.524	15.456	17.388	19.320
11	.932	.863	.795	.726	.658	.590	.522	.453	.385	.316
12	.931	.862	.794	.725	.657	.587	.519	.450	.382	.312
13	.931	.862	.793	.723	.655	.585	.517	.447	.378	.309
14	.930	.861	.792	.722	.653	.583	.514	.444	.375	.305
15	.930	.860	.790	.720	.651	.581	.512	.441	.372	.302
16	.930	.860	.789	.719	.649	.579	.509	.438	.369	.298
17	.929	.859	.788	.717	.647	.577	.506	.435	.366	.294
18	.929	.858	.787	.716	.645	.575	.504	.432	.362	.291
19	.929	.858	.786	.714	.643	.572	.500	.429	.359	.287
20	1.928	3.857	5.785	7.713	9.641	11.570	13.498	15.426	17.355	19.283
21	.928	.856	.784	.711	.640	.568	.495	.423	.352	.280
22	.928	.855	.783	.710	.638	.566	.493	.420	.349	.276
23	.927	.854	.782	.708	.636	.564	.490	.417	.345	.272
24	.927	.853	.780	.707	.634	.561	.487	.414	.342	.269
25	.927	.853	.779	.705	.632	.559	.485	.411	.339	.265
26	.926	.852	.778	.703	.631	.557	.482	.408	.335	.261
27	.926	.851	.777	.702	.629	.555	.480	.405	.332	.258
28	.926	.850	.776	.700	.627	.553	.477	.402	.328	.254
29	.926	.849	.775	.699	.625	.551	.475	.400	.325	.250
30	1.925	3.849	5.774	7.698	9.623	11.548	13.472	15.397	17.321	19.246
31	.925	.848	.773	.696	.621	.546	.470	.394	.318	.243
32	.925	.847	.772	.695	.619	.544	.467	.391	.315	.239
33	.924	.847	.771	.693	.617	.542	.465	.388	.312	.236
34	.924	.846	.769	.692	.615	.540	.462	.385	.308	.232
35	.923	.846	.768	.690	.613	.537	.460	.382	.305	.228
36	.923	.845	.767	.689	.611	.535	.457	.379	.301	.224
37	.922	.844	.766	.687	.609	.532	.455	.376	.298	.221
38	.922	.843	.765	.686	.607	.530	.452	.373	.295	.217
39	.922	.843	.764	.685	.605	.528	.449	.370	.291	.213
40	1.921	3.842	5.763	7.684	9.604	11.525	13.446	15.367	17.288	19.200
41	.921	.841	.762	.682	.602	.523	.444	.364	.285	.205
42	.920	.840	.761	.681	.600	.521	.441	.361	.281	.202
43	.920	.839	.760	.679	.599	.518	.439	.358	.278	.198
44	.920	.839	.758	.678	.597	.516	.436	.355	.274	.194
45	.919	.838	.757	.676	.595	.514	.434	.352	.271	.191
46	.919	.837	.756	.675	.593	.512	.431	.349	.267	.187
47	.918	.836	.755	.673	.591	.510	.429	.346	.263	.184
48	.918	.836	.754	.672	.589	.508	.426	.343	.260	.180
49	.918	.835	.753	.670	.588	.505	.423	.340	.257	.176
50	1.917	3.834	5.752	7.669	9.586	11.503	13.420	15.338	17.255	19.172
51	.917	.834	.751	.667	.584	.501	.418	.335	.252	.169
52	.917	.833	.750	.666	.583	.499	.415	.332	.248	.165
53	.916	.832	.749	.664	.581	.497	.413	.330	.245	.161
54	.916	.832	.748	.663	.579	.494	.410	.327	.242	.158
55	.916	.831	.747	.661	.577	.492	.408	.324	.238	.154
56	.915	.830	.746	.660	.575	.490	.405	.321	.235	.150
57	.915	.829	.744	.658	.573	.488	.403	.318	.231	.146
58	.915	.828	.743	.657	.571	.486	.400	.315	.228	.142
59	.914	.828	.742	.655	.570	.484	.397	.312	.225	.139
60	1.914	3.827	5.741	7.654	9.568	11.482	13.395	15.309	17.222	19.136

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.002
5	.004
6	.005
7	.007
8	.010
9	.012
10	.015

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.297
2	4.594
3	6.892
4	9.189
5	11.486
6	13.783
7	16.080
8	18.378
9	20.675
10	22.972

TABLE X.—*Co-ordinates for projection of maps. Scale* $\frac{1}{31680}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
34 00	1.914	3.827	5.741	7.654	9.568	11.482	13.395	15.309	17.222	19.136
1	.914	.827	.740	.652	.566	.480	.392	.306	.219	.132
2	.913	.826	.739	.651	.564	.478	.390	.303	.215	.128
3	.913	.825	.737	.649	.562	.475	.387	.300	.212	.125
4	.913	.824	.736	.648	.560	.473	.385	.297	.208	.121
5	.912	.824	.735	.646	.558	.471	.382	.294	.205	.117
6	.912	.823	.734	.645	.556	.468	.380	.291	.201	.113
7	.911	.822	.733	.643	.554	.466	.377	.288	.198	.109
8	.911	.821	.731	.642	.552	.463	.375	.285	.194	.106
9	.911	.821	.730	.640	.550	.461	.372	.282	.191	.102
10	1.910	3.820	5.729	7.639	9.549	11.459	13.369	15.278	17.188	19.098
11	.910	.819	.728	.637	.547	.457	.367	.275	.184	.094
12	.909	.819	.726	.636	.545	.454	.364	.272	.181	.090
13	.909	.818	.725	.635	.543	.452	.362	.269	.177	.087
14	.909	.817	.724	.633	.541	.449	.359	.266	.174	.083
15	.908	.816	.723	.632	.539	.447	.357	.263	.170	.079
16	.908	.815	.722	.630	.537	.445	.354	.260	.167	.075
17	.907	.814	.721	.629	.535	.442	.351	.257	.164	.072
18	.907	.813	.720	.627	.533	.440	.348	.254	.160	.068
19	.907	.813	.719	.626	.531	.438	.345	.251	.157	.064
20	1.906	3.812	5.718	7.624	9.530	11.436	13.342	15.248	17.154	19.060
21	.906	.811	.717	.623	.528	.433	.339	.245	.150	.056
22	.905	.810	.715	.621	.526	.431	.337	.242	.147	.052
23	.905	.809	.714	.620	.524	.428	.334	.239	.143	.048
24	.905	.808	.713	.618	.522	.426	.332	.236	.140	.045
25	.904	.807	.712	.617	.520	.423	.329	.233	.136	.041
26	.904	.806	.711	.615	.518	.421	.326	.230	.133	.037
27	.903	.805	.710	.614	.516	.419	.324	.227	.129	.033
28	.903	.805	.709	.612	.514	.417	.321	.224	.126	.029
29	.903	.804	.708	.610	.512	.415	.318	.221	.123	.026
30	1.902	3.804	5.707	7.609	9.511	11.413	13.315	15.218	17.120	19.022
31	.902	.803	.706	.607	.509	.410	.313	.215	.116	.018
32	.901	.802	.704	.606	.507	.408	.310	.212	.113	.014
33	.901	.802	.703	.604	.505	.406	.308	.209	.110	.011
34	.901	.801	.702	.603	.503	.404	.305	.206	.106	.007
35	.900	.800	.701	.601	.501	.401	.302	.203	.103	.003
36	.900	.799	.700	.600	.499	.399	.300	.200	.099	.000
37	.899	.799	.699	.598	.497	.397	.297	.197	.096	18.996
38	.899	.798	.698	.597	.495	.395	.294	.194	.092	.992
39	.899	.797	.696	.595	.493	.392	.292	.191	.089	.988
40	1.898	3.797	5.695	7.594	9.492	11.390	13.289	15.187	17.086	18.984
41	.898	.796	.694	.592	.490	.388	.286	.184	.082	.980
42	.898	.795	.693	.591	.488	.386	.284	.181	.079	.976
43	.897	.794	.692	.589	.486	.383	.281	.178	.075	.973
44	.897	.794	.691	.588	.484	.381	.278	.175	.072	.969
45	.897	.793	.690	.586	.482	.378	.276	.172	.068	.965
46	.896	.792	.689	.585	.480	.376	.273	.169	.065	.961
47	.896	.792	.688	.583	.478	.374	.271	.166	.061	.958
48	.896	.791	.687	.582	.476	.372	.268	.163	.058	.954
49	.895	.790	.686	.580	.474	.370	.265	.160	.054	.950
50	1.895	3.789	5.684	7.578	9.473	11.368	13.262	15.157	17.051	18.946
51	.895	.788	.683	.577	.471	.365	.260	.154	.048	.942
52	.894	.787	.682	.575	.469	.363	.257	.151	.044	.939
53	.894	.786	.681	.574	.467	.361	.255	.148	.041	.935
54	.893	.786	.680	.572	.465	.359	.252	.145	.037	.931
55	.893	.785	.678	.571	.463	.357	.250	.142	.034	.927
56	.893	.784	.677	.570	.461	.354	.247	.139	.030	.923
57	.892	.783	.676	.568	.459	.352	.244	.136	.027	.920
58	.892	.783	.675	.567	.457	.350	.242	.133	.024	.916
59	.891	.782	.674	.565	.455	.347	.239	.130	.021	.912
60	1.891	3.782	5.673	7.564	9.454	11.345	13.236	15.127	17.018	18.909

Longitude interval.	Ordinates of developed parallel.
	Inches.
1	0.000
2	.001
3	.001
4	.002
5	.004
6	.006
7	.008
8	.010
9	.012
10	.015

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.298
2	4.595
3	6.893
4	9.190
5	11.488
6	13.786
7	16.083
8	18.381
9	20.678
10	22.976

TABLE X.—*Co-ordinates for projection of maps. Scale* $\frac{1}{31680}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude-	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
35 00	1.891	3.782	5.673	7.564	9.454	11.345	13.236	15.127	17.018	18.909
1	.891	.781	.672	.562	.452	.343	.234	.124	.015	.905
2	.890	.780	.670	.561	.450	.341	.231	.121	.011	.901
3	.890	.780	.669	.559	.448	.338	.228	.118	.008	.897
4	.890	.779	.668	.558	.446	.336	.225	.115	.004	.893
5	.889	.778	.667	.556	.444	.334	.223	.112	.001	.890
6	.889	.777	.666	.555	.442	.331	.220	.109	16.997	.886
7	.888	.776	.665	.553	.440	.329	.217	.106	.994	.882
8	.888	.775	.663	.552	.438	.327	.214	.103	.990	.878
9	.888	.775	.662	.550	.436	.325	.212	.100	.987	.874
10	1.887	3.774	5.661	7.548	9.435	11.322	13.209	15.096	16.983	18.870
11	.887	.773	.660	.547	.433	.320	.206	.093	.980	.866
12	.886	.772	.658	.545	.431	.318	.203	.090	.976	.862
13	.886	.772	.657	.544	.429	.315	.201	.087	.973	.858
14	.886	.771	.656	.543	.427	.313	.198	.084	.969	.854
15	.885	.770	.655	.541	.425	.311	.195	.081	.966	.851
16	.885	.769	.654	.539	.423	.308	.193	.078	.962	.847
17	.884	.768	.652	.538	.421	.306	.190	.075	.958	.843
18	.884	.767	.651	.536	.419	.304	.187	.072	.955	.839
19	.884	.767	.650	.534	.417	.301	.185	.069	.951	.835
20	1.883	3.766	5.649	7.532	9.415	11.299	13.182	15.065	16.948	18.831
21	.883	.765	.648	.531	.413	.297	.179	.062	.944	.827
22	.882	.764	.647	.529	.411	.294	.176	.059	.941	.823
23	.882	.763	.646	.528	.409	.292	.174	.056	.937	.819
24	.882	.763	.645	.526	.407	.289	.171	.053	.934	.815
25	.881	.762	.644	.525	.405	.287	.168	.050	.930	.811
26	.881	.761	.643	.523	.403	.284	.165	.047	.927	.808
27	.880	.760	.642	.522	.401	.282	.162	.044	.923	.804
28	.880	.759	.641	.520	.399	.279	.160	.041	.920	.800
29	.880	.759	.640	.519	.397	.277	.157	.038	.916	.796
30	1.879	3.758	5.638	7.517	9.396	11.275	13.154	15.034	16.913	18.792
31	.879	.757	.637	.516	.394	.272	.152	.031	.909	.788
32	.878	.757	.636	.514	.392	.270	.149	.028	.906	.784
33	.878	.756	.634	.513	.390	.267	.147	.025	.902	.780
34	.878	.755	.633	.511	.388	.265	.144	.022	.899	.777
35	.877	.754	.632	.510	.386	.263	.141	.019	.895	.773
36	.877	.754	.631	.508	.384	.260	.139	.016	.892	.769
37	.876	.753	.630	.507	.382	.258	.136	.013	.888	.765
38	.876	.752	.628	.505	.380	.256	.133	.010	.885	.761
39	.876	.752	.627	.503	.378	.254	.130	.006	.881	.757
40	1.875	3.751	5.626	7.501	9.376	11.252	13.127	15.002	16.878	18.753
41	.875	.750	.625	.500	.374	.250	.124	14.999	.874	.749
42	.874	.750	.623	.498	.372	.247	.122	.996	.871	.745
43	.874	.749	.622	.497	.370	.245	.119	.993	.867	.741
44	.874	.748	.621	.495	.368	.242	.116	.990	.864	.737
45	.873	.747	.620	.493	.366	.240	.113	.987	.860	.733
46	.873	.746	.619	.492	.364	.237	.111	.984	.857	.730
47	.873	.746	.618	.490	.362	.235	.108	.981	.853	.726
48	.872	.745	.616	.489	.360	.232	.105	.978	.850	.722
49	.872	.744	.615	.487	.358	.230	.102	.974	.846	.718
50	1.871	3.743	5.614	7.486	9.357	11.228	13.100	14.971	16.843	18.714
51	.871	.742	.613	.484	.355	.226	.097	.968	.839	.710
52	.871	.741	.611	.483	.353	.224	.094	.965	.836	.707
53	.870	.741	.610	.481	.351	.221	.092	.962	.832	.703
54	.870	.740	.609	.480	.349	.219	.089	.959	.829	.699
55	.870	.739	.608	.478	.347	.217	.086	.956	.825	.695
56	.869	.738	.607	.477	.345	.215	.084	.953	.822	.691
57	.869	.737	.606	.475	.343	.213	.081	.950	.818	.687
58	.869	.736	.605	.474	.341	.211	.078	.947	.815	.683
59	.868	.735	.604	.472	.339	.208	.075	.944	.811	.679
60	1.868	3.735	5.603	7.470	9.338	11.206	13.073	14.941	16.808	18.676

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.002
5	.004
6	.006
7	.008
8	.010
9	.013
10	.016

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.298
2	4.596
3	6.894
4	9.192
5	11.490
6	13.788
7	16.086
8	18.384
9	20.682
10	22.980

TABLE X.—*Co-ordinates for projection of maps. Scale* $\frac{1}{31680}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ lon. gitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
36 00	1.868	3.735	5.603	7.470	9.338	11.206	13.073	14.941	16.808	18.676
1	.868	.734	.602	.468	.336	.204	.070	.938	.804	.672
2	.867	.733	.601	.467	.334	.201	.067	.935	.801	.668
3	.867	.733	.599	.465	.332	.199	.065	.931	.798	.664
4	.867	.732	.598	.464	.330	.196	.062	.928	.794	.660
5	.866	.731	.597	.462	.328	.194	.059	.925	.790	.656
6	.866	.730	.596	.461	.326	.191	.057	.922	.787	.652
7	.865	.729	.595	.459	.324	.189	.054	.918	.784	.648
8	.865	.729	.594	.458	.322	.187	.051	.915	.780	.644
9	.865	.728	.592	.456	.320	.184	.048	.912	.776	.640
10	1.864	3.727	5.591	7.454	9.318	11.182	13.045	14.909	16.772	18.636
11	.864	.726	.590	.453	.316	.180	.042	.906	.769	.632
12	.863	.725	.589	.451	.314	.177	.039	.903	.765	.628
13	.863	.725	.587	.450	.312	.175	.037	.899	.762	.624
14	.863	.724	.586	.448	.310	.172	.034	.896	.758	.620
15	.862	.723	.585	.447	.308	.170	.031	.893	.755	.616
16	.862	.722	.584	.445	.306	.167	.028	.890	.751	.612
17	.861	.721	.583	.444	.304	.165	.026	.886	.748	.608
18	.861	.721	.581	.442	.302	.163	.023	.883	.744	.604
19	.861	.720	.580	.440	.300	.160	.020	.880	.740	.600
20	1.860	3.719	5.579	7.438	9.298	11.158	13.017	14.877	16.736	18.596
21	.860	.718	.578	.437	.296	.156	.014	.874	.733	.592
22	.859	.717	.577	.435	.294	.154	.011	.871	.729	.588
23	.859	.717	.575	.434	.292	.151	.009	.867	.726	.584
24	.859	.716	.574	.432	.290	.149	.006	.864	.722	.580
25	.858	.715	.573	.431	.288	.147	.003	.861	.719	.576
26	.858	.714	.572	.429	.286	.144	.000	.858	.715	.572
27	.857	.713	.570	.428	.284	.142	12.998	.854	.712	.568
28	.857	.713	.569	.426	.282	.139	.995	.851	.708	.564
29	.857	.712	.568	.424	.280	.137	.992	.848	.704	.560
30	1.856	3.711	5.567	7.422	9.278	11.134	12.989	14.845	16.700	18.556
31	.856	.710	.566	.421	.276	.132	.986	.842	.697	.552
32	.855	.709	.564	.419	.274	.129	.983	.838	.694	.548
33	.855	.708	.563	.418	.272	.127	.981	.835	.690	.544
34	.855	.708	.562	.416	.270	.124	.978	.832	.686	.540
35	.854	.707	.561	.415	.268	.122	.975	.829	.683	.536
36	.854	.706	.560	.413	.266	.119	.972	.826	.679	.532
37	.853	.705	.558	.412	.264	.117	.970	.822	.676	.528
38	.853	.705	.557	.410	.262	.114	.967	.819	.672	.524
39	.853	.704	.556	.408	.260	.112	.964	.816	.668	.520
40	1.852	3.703	5.555	7.406	9.258	11.110	12.961	14.813	16.664	18.516
41	.852	.702	.554	.405	.256	.107	.958	.810	.661	.512
42	.851	.701	.553	.403	.254	.105	.955	.807	.657	.508
43	.851	.701	.551	.402	.252	.102	.953	.803	.654	.504
44	.851	.700	.550	.400	.250	.100	.950	.800	.650	.500
45	.850	.699	.549	.399	.248	.097	.947	.796	.647	.496
46	.850	.698	.548	.397	.246	.095	.944	.793	.643	.492
47	.849	.697	.547	.396	.244	.093	.942	.790	.640	.488
48	.849	.697	.546	.394	.242	.090	.939	.787	.636	.484
49	.849	.696	.544	.392	.240	.088	.936	.784	.632	.480
50	1.848	3.695	5.543	7.390	9.238	11.086	12.933	14.781	16.628	18.476
51	.848	.694	.542	.389	.236	.083	.930	.778	.625	.472
52	.847	.693	.541	.387	.234	.081	.928	.775	.621	.468
53	.847	.693	.540	.386	.232	.079	.925	.772	.618	.464
54	.847	.692	.538	.384	.230	.076	.922	.769	.614	.460
55	.846	.691	.537	.383	.228	.074	.920	.765	.611	.456
56	.846	.690	.536	.381	.226	.071	.917	.762	.607	.452
57	.845	.689	.535	.380	.224	.069	.915	.759	.604	.448
58	.845	.689	.534	.378	.222	.067	.912	.756	.600	.444
59	.845	.688	.532	.377	.220	.065	.909	.753	.597	.440
60	1.844	3.687	5.531	7.375	9.218	11.062	12.906	14.750	16.593	18.437

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.003
5	.004
6	.006
7	.008
8	.010
9	.013
10	.016

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.298
2	4.597
3	6.895
4	9.194
5	11.492
6	13.790
7	16.089
8	18.387
9	20.686
10	22.984

TABLE X.—*Co-ordinates for projection of maps. Scale* $\frac{1}{31680}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
37 00	1.844	3.687	5.531	7.375	9.218	11.062	12.906	14.750	16.593	18.437
1	.844	.686	.530	.373	.216	.060	.903	.747	.589	.433
2	.843	.685	.529	.371	.214	.057	.900	.744	.585	.429
3	.843	.684	.528	.370	.212	.055	.897	.740	.582	.425
4	.843	.683	.526	.368	.210	.052	.894	737	.578	.421
5	.842	.683	.525	.366	.208	.050	.891	.734	.574	.417
6	.842	.682	.524	.365	.206	.047	.888	.731	.571	.413
7	.841	.681	.523	.363	.204	.045	.885	.728	.567	.409
8	.841	.680	.521	.362	.202	.043	.882	.724	.563	.405
9	.840	.680	.520	.360	.200	.040	.880	.721	.560	.401
10	1.840	3.679	5.519	7.358	9.198	11.038	12.877	14.717	16.556	18.396
11	.840	.679	.518	.357	.196	.035	.874	.714	.552	.392
12	.839	.678	.517	.355	.194	.033	.871	.710	.548	.388
13	.839	.677	.516	.354	.192	.030	.868	.707	.545	.384
14	.838	.676	.514	.352	.190	.028	.865	.704	.541	.380
15	.838	.675	.513	.350	.188	.025	.862	.701	.537	.376
16	.838	.674	.512	.349	.186	.022	.860	.697	.534	.372
17	.837	.673	.511	.347	.184	.020	.857	.694	.530	.368
18	.837	.673	.510	.345	.182	.018	.854	.691	.527	.364
19	.836	.672	.508	.344	.180	.016	.851	.688	.523	.360
20	1.836	3.671	5.507	7.342	9.177	11.013	12.848	14.684	16.519	18.355
21	.835	.670	.505	.341	.175	.011	.845	.681	.516	.351
22	.835	.669	.504	.339	.173	.008	.842	.677	.512	.347
23	.834	.669	.503	.337	.171	.006	.840	.674	.509	.343
24	.834	.668	.502	.336	.169	.003	.837	.671	.505	.339
25	.833	.667	.500	.334	.167	.001	.834	.667	.502	.335
26	.833	.666	.499	.332	.165	10.998	.831	.664	.498	.331
27	.832	.665	.498	.331	.163	.996	.829	.661	.494	.327
28	.832	.664	.497	.329	.161	.993	.826	.658	.491	.323
29	.831	.664	.495	.327	.159	.991	.823	.654	.487	.319
30	1.831	3.663	5.494	7.326	9.157	10.988	12.820	14.651	16.483	18.314
31	.831	.662	.492	.324	.155	.986	.817	.647	.480	.310
32	.830	.661	.491	.323	.153	.983	.814	.644	.476	.306
33	.830	.661	.490	.321	.151	.981	.811	.641	.472	.302
34	.829	.660	.489	.320	.149	.978	.808	.638	.469	.298
35	.829	.660	.488	.318	.147	.976	.806	.635	.465	.294
36	.828	.659	.486	.317	.145	.973	.803	.632	.462	.290
37	.828	.658	.485	.315	.143	.971	.800	.629	.458	.286
38	.828	.657	.484	.314	.141	.968	.797	.625	.455	.282
39	.827	.656	.483	.312	.139	.966	.795	.622	.451	.278
40	1.827	3.655	5.482	7.310	9.137	10.964	12.792	14.619	16.447	18.274
41	.826	.654	.480	.309	.135	.962	.789	.616	.444	.270
42	.826	.653	.479	.307	.133	.959	.786	.612	.440	.266
43	.825	.653	.478	.305	.131	.957	.783	.609	.437	.262
44	.825	.652	.476	.304	.129	.954	.780	.606	.433	.358
45	.825	.651	.475	.302	.127	.952	.777	.603	.429	.254
46	.824	.650	.474	.300	.125	.950	.774	.600	.426	.250
47	.824	.650	.473	.299	.123	.947	.771	.596	.422	.246
48	.824	.649	.472	.297	.121	.945	.768	.593	.418	.242
49	.823	.648	.471	.295	.119	.942	.765	.590	.414	.238
50	1.823	3.647	5.470	7.293	9.116	10.940	12.763	14.586	16.410	18.233
51	.823	.646	.468	.292	.114	.938	.760	.583	.407	.229
52	.822	.645	.467	.290	.112	.935	.757	.580	.403	.225
53	.822	.645	.466	.289	.110	.933	.755	.576	.399	.221
54	.822	.644	.465	.287	.108	.930	.752	.573	.395	.217
55	.821	.643	.464	.285	.106	.928	.749	.570	.392	.213
56	.821	.642	.463	.284	.104	.925	.746	.566	.388	.209
57	.820	.641	.461	.282	.102	.923	.743	.563	.384	.205
58	.820	.641	.460	.281	.100	.920	.741	.560	.381	.201
59	.819	.640	.459	.279	.098	.918	.738	.557	.377	.197
60	1.819	3.639	5.458	7.277	9.096	10.916	12.735	14.554	16.374	18.193

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.003
5	.004
6	.006
7	.008
8	.010
9	.013
10	.016

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.299
2	4.598
3	6.896
4	9.195
5	11.494
6	13.793
7	16.092
8	18.390
9	20.689
10	22.988

TABLE X.—*Co-ordinates for projection of maps. Scale* $\frac{1}{316800}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
38 00	1.819	3.639	5.458	7.277	9.096	10.916	12.735	14.554	16.374	18.193
1	.819	.638	.457	.275	.094	.914	.732	.551	.370	.189
2	.818	.637	.456	.273	.092	.911	.729	.548	.366	.185
3	.818	.636	.454	.272	.090	.909	.726	.544	.362	.180
4	.817	.635	.453	.271	.088	.906	.723	.541	.359	.176
5	.817	.634	.452	.269	.086	.904	.720	.538	.355	.172
6	.817	.633	.451	.267	.084	.901	.717	.534	.351	.168
7	.816	.632	.450	.266	.082	.899	.714	.531	.347	.164
8	.816	.631	.448	.264	.080	.896	.711	.528	.344	.159
9	.815	.631	.447	.262	.078	.894	.708	.524	.340	.155
10	1.815	3.630	5.445	7.260	9.075	10.891	12.706	14.521	16.336	18.151
11	.815	.629	.444	.258	.073	.889	.703	.517	.332	.147
12	.814	.628	.443	.257	.071	.886	.700	.514	.328	.143
13	.814	.627	.441	.255	.069	.884	.697	.510	.324	.138
14	.813	.626	.440	.254	.067	.881	.694	.507	.321	.134
15	.813	.625	.439	.252	.065	.878	.691	.504	.317	.130
16	.813	.624	.438	.251	.063	.876	.688	.500	.313	.126
17	.812	.624	.436	.249	.061	.873	.685	.497	.309	.122
18	.812	.623	.435	.247	.059	.871	.682	.493	.305	.118
19	.811	.622	.434	.246	.057	.868	.679	.490	.302	.113
20	1.811	3.622	5.433	7.244	9.054	10.865	12.676	14.487	16.298	18.109
21	.811	.621	.432	.242	.052	.863	.673	.484	.294	.105
22	.810	.620	.430	.241	.050	.860	.670	.480	.290	.101
23	.810	.619	.429	.239	.048	.858	.667	.477	.287	.097
24	.809	.618	.428	.237	.046	.855	.664	.474	.284	.092
25	.809	.617	.427	.236	.044	.853	.661	.470	.280	.088
26	.809	.616	.425	.234	.042	.850	.658	.467	.276	.084
27	.808	.615	.424	.232	.040	.847	.655	.463	.272	.080
28	.808	.614	.423	.231	.038	.845	.652	.460	.268	.076
29	.807	.614	.421	.229	.036	.843	.650	.457	.264	.071
30	1.807	3.613	5.420	7.227	9.033	10.840	12.647	14.454	16.260	18.067
31	.807	.612	.419	.225	.031	.838	.644	.450	.257	.063
32	.806	.611	.417	.224	.029	.835	.641	.447	.253	.059
33	.806	.610	.416	.222	.027	.833	.638	.443	.249	.054
34	.805	.609	.415	.220	.025	.830	.635	.440	.245	.050
35	.805	.609	.413	.219	.023	.828	.632	.436	.241	.046
36	.804	.608	.412	.217	.021	.825	.629	.433	.237	.042
37	.804	.608	.411	.215	.019	.823	.626	.430	.234	.038
38	.803	.607	.410	.214	.017	.820	.623	.426	.230	.033
39	.803	.606	.408	.212	.015	.818	.620	.423	.226	.029
40	1.802	3.605	5.407	7.210	9.012	10.815	12.617	14.420	16.222	18.025
41	.802	.604	.406	.208	.010	.813	.614	.417	.218	.021
42	.801	.603	.405	.207	.008	.810	.611	.413	.214	.017
43	.801	.602	.404	.205	.006	.808	.608	.410	.210	.012
44	.800	.601	.402	.203	.004	.805	.605	.406	.207	.008
45	.800	.601	.401	.202	.002	.803	.602	.403	.203	.004
46	.800	.600	.400	.200	.000	.800	.599	.400	.199	.000
47	.799	.599	.399	.198	8.998	.798	.596	.396	.195	17.995
48	.799	.598	.398	.196	.996	.795	.593	.393	.192	.991
49	.798	.597	.396	.195	.994	.792	.590	.389	.188	.987
50	1.798	3.596	5.395	7.193	8.991	10.789	12.587	14.386	16.184	17.983
51	.798	.596	.394	.191	.989	.787	.584	.383	.180	.979
52	.797	.595	.392	.190	.987	.784	.581	.380	.176	.975
53	.797	.594	.391	.188	.985	.782	.579	.376	.173	.971
54	.796	.593	.390	.187	.983	.779	.576	.373	.169	.967
55	.796	.593	.389	.185	.981	.777	.573	.370	.166	.963
56	.796	.592	.388	.184	.979	.775	.571	.367	.163	.959
57	.795	.591	.386	.182	.977	.772	.568	.364	.159	.955
58	.795	.590	.385	.181	.975	.770	.565	.360	.156	.951
59	.794	.590	.384	.179	.973	.768	.563	.357	.152	.947
60	1.794	3.589	5.383	7.177	8.971	10.766	12.560	14.354	16.149	17.943

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.003
5	.004
6	.006
7	.008
8	.010
9	.013
10	.016

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.299
2	4.598
3	6.898
4	9.197
5	11.496
6	13.795
7	16.094
8	18.394
9	20.693
10	22.992

TABLE X.—*Co-ordinates for projection of maps. Scale* $\frac{1}{31680}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
39 00	1.794	3.589	5.383	7.177	8.971	10.766	12.560	14.354	16.149	17.943
1	.794	.588	.382	.175	.969	.764	.557	.351	.145	.939
2	.794	.587	.381	.173	.967	.761	.554	.347	.141	.935
3	.793	.586	.379	.172	.965	.759	.551	.344	.137	.930
4	.793	.585	.378	.170	.963	.756	.548	.340	.133	.926
5	.792	.584	.377	.168	.961	.754	.545	.337	.130	.922
6	.792	.583	.376	.166	.959	.751	.542	.333	.126	.917
7	.792	.582	.375	.165	.957	.749	.539	.330	.122	.913
8	.791	.581	.374	.163	.955	.746	.536	.327	.118	.909
9	.791	.581	.372	.162	.953	.743	.533	.323	.114	.904
10	1.790	3.580	5.370	7.160	8.950	10.740	12.530	14.320	16.110	17.900
11	.790	.579	.369	.159	.948	.738	.527	.317	.106	.896
12	.789	.578	.368	.157	.946	.735	.524	.313	.102	.892
13	.789	.577	.366	.156	.944	.732	.521	.310	.099	.887
14	.789	.577	.365	.154	.942	.730	.518	.306	.095	.883
15	.788	.576	.364	.153	.940	.728	.515	.303	.091	.879
16	.788	.575	.362	.151	.938	.725	.513	.300	.087	.875
17	.787	.574	.361	.149	.936	.723	.510	.296	.083	.870
18	.787	.573	.360	.147	.934	.720	.507	.293	.080	.866
19	.787	.573	.358	.145	.931	.718	.504	.290	.076	.862
20	1.786	3.572	5.357	7.143	8.929	10.715	12.501	14.286	16.072	17.858
21	.786	.571	.356	.142	.927	.713	.498	.283	.068	.854
22	.785	.570	.354	.140	.925	.710	.495	.279	.064	.850
23	.785	.569	.353	.139	.922	.708	.491	.276	.060	.845
24	.784	.568	.352	.137	.920	.705	.488	.272	.056	.841
25	.784	.567	.350	.135	.918	.702	.485	.269	.052	.837
26	.783	.566	.349	.133	.916	.700	.482	.265	.048	.833
27	.783	.565	.348	.131	.914	.697	.479	.262	.044	.828
28	.782	.564	.347	.129	.912	.695	.476	.258	.040	.824
29	.782	.564	.345	.128	.909	.692	.473	.255	.037	.820
30	1.781	3.563	5.344	7.126	8.907	10.689	12.470	14.252	16.033	17.815
31	.781	.562	.343	.124	.905	.687	.467	.248	.029	.811
32	.780	.561	.341	.123	.903	.684	.464	.245	.026	.807
33	.780	.560	.340	.121	.901	.682	.462	.241	.022	.802
34	.780	.559	.339	.119	.899	.679	.459	.238	.018	.798
35	.779	.558	.338	.117	.897	.677	.456	.235	.015	.794
36	.779	.558	.337	.116	.895	.674	.453	.231	.011	.790
37	.778	.557	.335	.114	.893	.672	.450	.228	.007	.786
38	.778	.556	.334	.113	.891	.669	.447	.224	.004	.781
39	.778	.555	.333	.111	.888	.667	.444	.221	.000	.777
40	1.777	3.555	5.332	7.109	8.886	10.664	12.441	14.218	15.996	17.773
41	.777	.554	.330	.107	.884	.662	.438	.215	.992	.769
42	.776	.553	.329	.106	.882	.659	.435	.211	.988	.765
43	.776	.552	.328	.104	.880	.656	.432	.208	.984	.760
44	.776	.551	.327	.102	.878	.654	.429	.204	.980	.756
45	.775	.550	.325	.101	.876	.651	.426	.201	.976	.752
46	.775	.549	.324	.099	.874	.649	.423	.197	.972	.748
47	.774	.548	.323	.097	.872	.646	.420	.194	.968	.743
48	.774	.547	.322	.096	.870	.644	.417	.190	.964	.739
49	.774	.546	.320	.094	.868	.641	.414	.187	.960	.735
50	1.773	3.546	5.319	7.092	8.865	10.638	12.411	14.184	15.957	17.730
51	.773	.545	.318	.090	.863	.636	.408	.180	.953	.726
52	.772	.544	.317	.089	.861	.633	.405	.177	.950	.722
53	.772	.543	.315	.087	.859	.631	.402	.174	.946	.718
54	.772	.542	.314	.086	.857	.628	.399	.170	.942	.714
55	.771	.541	.313	.084	.855	.626	.396	.167	.938	.709
56	.771	.541	.311	.082	.853	.623	.393	.164	.934	.705
57	.770	.540	.310	.081	.851	.621	.390	.160	.930	.701
58	.770	.539	.309	.079	.849	.618	.388	.157	.927	.697
59	.770	.538	.307	.077	.846	.616	.385	.153	.923	.692
60	1.769	3.538	5.306	7.075	8.844	10.613	12.382	14.150	15.919	17.688

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.003
5	.004
6	.006
7	.008
8	.010
9	.013
10	.016

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.300
2	4.599
3	6.899
4	9.198
5	11.498
6	13.798
7	16.097
8	18.397
9	20.696
10	22.996

TABLE X.—*Co-ordinates for projection of maps.—Scale* $\frac{1}{31680}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.										Longitude interval.	Ordinates of developed parallel.
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.		
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	′	*Inches.*
40 00	1.769	3.538	5.306	7.075	8.844	10.613	12.382	14.150	15.919	17.688	1	0.000
1	.769	.537	.305	.073	.842	.610	.379	.147	.915	.684	2	.001
2	.768	.536	.304	.071	.840	.608	.376	.143	.911	.680	3	.001
3	.768	.535	.302	.070	.838	.605	.373	.140	.907	.675	4	.003
4	.767	.534	.301	.068	.835	.603	.370	.137	.903	.671	5	.004
5	.767	.533	.300	.066	.833	.600	.367	.133	.900	.667	6	.006
											7	.008
6	.766	.532	.298	.065	.831	.598	.364	.130	.896	.662	8	.010
7	.766	.531	.297	.063	.829	.595	.361	.126	.892	.658	9	.013
8	.765	.530	.296	.061	.827	.592	.358	.123	.888	.654	10	.016
9	.765	.530	.295	.060	.824	.590	.354	.120	.884	.650		
10	1.764	3.529	5.293	7.058	8.822	10.587	12.351	14.116	15.880	17.645		
11	.764	.528	.292	.056	.820	.585	.348	.113	.876	.641		
12	.763	.527	.291	.054	.818	.582	.345	.109	.872	.636		
13	.763	.526	.289	.053	.816	.580	.342	.106	.868	.632		
14	.762	.525	.288	.051	.814	.577	.339	.102	.865	.627		
15	.762	.524	.287	.049	.811	.574	.336	.099	.861	.623		
16	.762	.523	.285	.047	.809	.572	.333	.095	.857	.618		
17	.761	.522	.284	.045	.807	.569	.330	.092	.853	.614		
18	.761	.521	.283	.044	.805	.567	.327	.088	.849	.610		
19	.761	.521	.282	.042	.803	.564	.324	.085	.845	.605		
20	1.760	3.520	5.280	7.040	8.800	10.561	12.321	14.081	15.841	17.601		
21	.760	.519	.279	.038	.798	.559	.318	.078	.837	.597		
22	.759	.518	.278	.037	.796	.556	.315	.074	.833	.593		
23	.759	.517	.276	.035	.794	.554	.312	.071	.829	.588		
24	.759	.516	.275	.033	.792	.551	.309	.067	.826	.584		
25	.758	.515	.274	.032	.790	.549	.306	.064	.822	.580		
26	.758	.515	.272	.030	.787	.546	.303	.060	.818	.575		
27	.758	.514	.271	.028	.785	.543	.300	.057	.814	.571		
28	.757	.513	.270	.026	.783	.541	.297	.053	.810	.566		
29	.757	.512	.269	.025	.781	.538	.294	.050	.806	.562		
30	1.756	3.512	5.267	7.023	8.779	10.535	12.291	14.046	15.802	17.558		
31	.756	.511	.266	.021	.777	.532	.288	.043	.798	.554		
32	.755	.510	.265	.020	.775	.529	.285	.039	.794	.549		
33	.755	.509	.264	.018	.773	.527	.282	.036	.790	.545		
34	.754	.508	.262	.016	.771	.524	.279	.032	.786	.540		
35	.754	.507	.261	.015	.769	.522	.275	.029	.782	.536		
36	.753	.506	.260	.013	.767	.519	.272	.025	.779	.531		
37	.753	.505	.258	.012	.765	.517	.269	.022	.775	.527		
38	.752	.504	.257	.010	.763	.514	.266	.018	.771	.522		
39	.752	.504	.256	.008	.760	.511	.263	.015	.767	.518		
40	1.751	3.503	5.254	7.006	8.757	10.508	12.260	14.011	15.763	17.514		
41	.751	.502	.253	.004	.755	.506	.257	.008	.759	.510		
42	.750	.501	.252	.002	.753	.503	.254	.005	.755	.506		
43	.750	.500	.250	.001	.750	.501	.251	.001	.751	.501		
44	.750	.499	.249	6.999	.748	.498	.248	13.998	.747	.497		
45	.749	.498	.248	.997	.746	.496	.245	.994	.744	.493		
46	.749	.497	.246	.996	.744	.493	.242	.991	.740	.488	Latitude interval.	Meridional distances.
47	.748	.496	.245	.994	.742	.491	.239	.987	.736	.484		
48	.748	.495	.244	.992	.739	.488	.236	.984	.732	.480		
49	.748	.494	.242	.990	.737	.486	.233	.980	.728	.476		
50	1.747	3.494	5.241	6.988	8.735	10.483	12.230	13.977	15.724	17.471		
												Inches.
51	.747	.493	.240	.986	.733	.480	.227	.973	.720	.467	′	
52	.746	.492	.238	.985	.731	.477	.224	.970	.716	.463	1	2.300
53	.746	.491	.237	.983	.729	.475	.221	.966	.712	.458	2	4.600
54	.746	.490	.235	.981	.727	.472	.218	.963	.708	.454	3	6.900
55	.745	.489	.234	.980	.725	.469	.215	.959	.704	.449	4	9.200
											5	11.500
56	.745	.488	.233	.978	.722	.467	.212	.956	.700	.445	6	13.800
57	.744	.487	.231	.976	.720	.464	.208	.952	.696	.440	7	16.100
58	.744	.486	.230	.975	.718	.461	.205	.949	.692	.436	8	18.400
59	.744	.486	.229	.973	.716	.459	.202	.946	.688	.431	9	20.700
60	1.743	3.485	5.228	6.971	8.713	10.456	12.199	13.942	15.684	17.427	10	23.000

TABLE X.—*Co-ordinates for projection of maps.* ***Scale*** $\frac{1}{31680}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
41 00	1.743	3.485	5.228	6.971	8.713	10.456	12.199	13.942	15.684	17.427
1	.743	.484	.227	.969	.711	.453	.196	.938	.680	.423
2	.742	.483	.226	.967	.709	.451	.193	.935	.676	.418
3	.742	.482	.224	.965	.707	.448	.190	.931	.672	.414
4	.741	.482	.223	.964	.704	.446	.187	.928	.668	.409
5	.741	.481	.222	.962	.702	.443	.184	.924	.664	.405
6	.740	.480	.220	.960	.700	.440	.181	.921	.660	.400
7	.740	.479	.219	.959	.698	.438	.178	.917	.656	.396
8	.739	.478	.218	.957	.695	.435	.175	.913	.652	.392
9	.739	.478	.216	.955	.693	.433	.172	.910	.648	.387
10	1.738	3.477	5.215	6.953	8.691	10.430	12.168	13.906	15.645	17.383
11	.738	.476	.214	.951	.689	.427	.165	.903	.641	.379
12	.738	.475	.213	.950	.687	.424	.162	.899	.637	.374
13	.737	.474	.211	.948	.685	.422	.159	.896	.633	.370
14	.737	.473	.210	.946	.682	.419	.156	.892	.629	.365
15	.736	.472	.209	.945	.680	.416	.153	.889	.625	.361
16	.736	.471	.208	.943	.678	.413	.150	.885	.621	.356
17	.736	.470	.206	.942	.676	.411	.147	.882	.617	.352
18	.735	.469	.205	.940	.673	.408	.144	.878	.613	.348
19	.735	.469	.204	.938	.671	.405	.140	.875	.609	.343
20	1.734	3.468	5.202	6.936	8.669	10.403	12.137	13.871	15.605	17.339
21	.734	.467	.201	.934	.667	.400	.134	.868	.601	.335
22	.733	.466	.200	.932	.665	.398	.131	.864	.597	.330
23	.733	.465	.198	.931	.663	.395	.128	.860	.593	.326
24	.732	.464	.197	.929	.660	.392	.125	.857	.589	.321
25	.732	.463	.195	.927	.658	.390	.122	.853	.585	.317
26	.731	.462	.194	.925	.656	.387	.119	.850	.581	.312
27	.731	.461	.192	.923	.654	.384	.116	.846	.577	.308
28	.730	.460	.191	.922	.652	.382	.112	.843	.573	.304
29	.730	.460	.189	.920	.649	.379	.109	.839	.569	.299
30	1.729	3.459	5.188	6.918	8.647	10.377	12.106	13.836	15.565	17.295
31	.729	.458	.187	.916	.645	.374	.103	.832	.561	.290
32	.729	.457	.186	.914	.643	.372	.100	.829	.557	.286
33	.728	.456	.184	.912	.640	.369	.097	.825	.553	.281
34	.728	.455	.183	.911	.638	.367	.094	.822	.549	.277
35	.727	.454	.182	.909	.636	.364	.091	.818	.545	.273
36	.727	.453	.180	.907	.634	.361	.088	.815	.541	.268
37	.727	.452	.179	.905	.632	.359	.085	.811	.537	.264
38	.726	.451	.178	.903	.630	.356	.082	.808	.533	.259
39	.726	.451	.176	.902	.628	.354	.079	.804	.530	.255
40	1.725	3.450	5.175	6.900	8.625	10.351	12.076	13.801	15.526	17.251
41	.725	.449	.174	.898	.623	.348	.073	.797	.522	.246
42	.724	.448	.173	.896	.621	.346	.070	.794	.518	.242
43	.724	.447	.172	.895	.618	.343	.066	.790	.514	.237
44	.724	.446	.170	.893	.616	.340	.063	.787	.510	.233
45	.723	.445	.169	.891	.614	.338	.060	.783	.506	.228
46	.723	.444	.167	.889	.612	.335	.057	.779	.502	.224
47	.722	.443	.166	.887	.610	.332	.053	.776	.498	.219
48	.722	.442	.165	.886	.607	.330	.050	.772	.494	.215
49	.722	.442	.163	.884	.605	.327	.047	.769	.490	.210
50	1.721	3.441	5.162	6.882	8.603	10.324	12.044	13.765	15.485	17.206
51	.721	.440	.160	.880	.601	.321	.041	.762	.481	.201
52	.720	.439	.159	.878	.598	.319	.038	.758	.477	.197
53	.720	.438	.158	.877	.596	.316	.035	.755	.473	.192
54	.719	.437	.156	.875	.594	.313	.032	.751	.469	.188
55	.719	.436	.155	.873	.592	.311	.028	.748	.465	.183
56	.718	.435	.153	.871	.589	.308	.025	.744	.461	.179
57	.718	.434	.152	.869	.587	.305	.022	.740	.457	.174
58	.717	.433	.150	.868	.585	.303	.019	.737	.453	.170
59	.717	.433	.149	.866	.582	.300	.016	.733	.449	.165
60	1.716	3.432	5.148	6.864	8.580	10.297	12.013	13.729	15.445	17.161

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.003
5	.004
6	.006
7	.008
8	.011
9	.013
10	.017

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.300
2	4.601
3	6.901
4	9.202
5	11.502
6	13.802
7	16.103
8	18.403
9	20.704
10	23.004

TABLE X.—*Co-ordinates for projection of maps. Scale* $\frac{1}{31680}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
42 00	1.716	3.432	5.148	6.864	8.580	10.297	12.013	13.729	15.445	17.161
1	.716	.431	.147	.862	.578	.294	.010	.725	.441	.157
2	.716	.430	.146	.860	.576	.291	.007	.722	.437	.152
3	.715	.429	.144	.859	.574	.289	.003	.718	.433	.148
4	.715	.428	.143	.857	.571	.286	.000	.715	.429	.143
5	.714	.427	.142	.855	.569	.283	11.997	.711	.425	.139
6	.714	.426	.140	.853	.567	.281	.994	.708	.421	.134
7	.714	.425	.139	.851	.565	.278	.991	.704	.417	.130
8	.713	.424	.138	.850	.562	.275	.988	.700	.413	.125
9	.713	.424	.136	.848	.560	.272	.984	.697	.409	.121
10	1.712	3.423	5.135	6.846	8.558	10.270	11.981	13.693	15.404	17.116
11	.712	.422	.133	.844	.556	.267	.978	.690	.400	.112
12	.711	.421	.132	.842	.553	.264	.975	.686	.396	.107
13	.711	.420	.130	.840	.551	.262	.972	.683	.392	.103
14	.710	.419	.129	.839	.549	.259	.969	.679	.388	.098
15	.710	.418	.128	.837	.547	.256	.966	.676	.384	.094
16	.709	.417	.126	.835	.544	.253	.963	.672	.380	.089
17	.709	.416	.125	.833	.542	.251	.960	.669	.376	.085
18	.708	.415	.123	.831	.540	.248	.956	.665	.372	.080
19	.708	.415	.122	.830	.537	.245	.953	.661	.368	.076
20	1.707	3.414	5.121	6.828	8.535	10.243	11.950	13.657	15.364	17.071
21	.707	.413	.120	.826	.533	.240	.947	.654	.360	.067
22	.706	.412	.118	.824	.531	.237	.944	.651	.356	.062
23	.706	.411	.117	.822	.529	.235	.940	.647	.352	.058
24	.706	.410	.116	.821	.527	.232	.937	.644	.348	.053
25	.705	.409	.114	.819	.524	.229	.934	.640	.344	.049
26	.705	.408	.113	.817	.522	.227	.931	.636	.340	.044
27	.704	.407	.112	.815	.520	.224	.928	.633	.336	.040
28	.704	.406	.110	.814	.518	.221	.924	.629	.332	.035
29	.704	.405	.109	.812	.516	.219	.921	.625	.328	.031
30	1.703	3.405	5.108	6.810	8.513	10.216	11.918	13.621	15.323	17.026
31	.703	.404	.107	.808	.511	.213	.915	.617	.319	.022
32	.702	.403	.105	.806	.508	.210	.912	.614	.315	.017
33	.702	.402	.104	.804	.506	.208	.909	.610	.311	.013
34	.701	.401	.102	.802	.504	.205	.906	.607	.307	.008
35	.701	.400	.101	.801	.502	.203	.903	.603	.303	.004
36	.700	.399	.099	.799	.499	.200	.900	.600	.299	16.999
37	.700	.398	.098	.797	.497	.197	.897	.596	.295	.995
38	.699	.397	.096	.795	.495	.194	.894	.592	.291	.990
39	.699	.397	.095	.794	.492	.192	.890	.589	.287	.986
40	1.698	3.396	5.094	6.792	8.490	10.189	11.887	13.585	15.283	16.981
41	.698	.395	.093	.790	.488	.186	.884	.582	.279	.977
42	.697	.394	.091	.788	.486	.183	.881	.578	.275	.972
43	.697	.393	.090	.786	.483	.181	.877	.575	.271	.968
44	.697	.392	.088	.785	.481	.178	.874	.571	.267	.963
45	.696	.391	.087	.783	.479	.175	.871	.567	.263	.959
46	.696	.390	.085	.781	.477	.172	.868	.564	.259	.954
47	.695	.389	.084	.779	.475	.170	.865	.560	.255	.950
48	.695	.388	.083	.777	.473	.167	.862	.557	.251	.945
49	.695	.387	.082	.776	.470	.165	.859	.553	.247	.941
50	1.694	3.387	5.081	6.774	8.468	10.162	11.855	13.549	15.242	16.936
51	.694	.386	.079	.772	.466	.159	.852	.545	.238	.932
52	.693	.385	.078	.770	.464	.156	.849	.541	.234	.927
53	.693	.384	.076	.768	.461	.153	.845	.537	.230	.923
54	.692	.383	.075	.767	.459	.151	.842	.534	.226	.918
55	.692	.382	.073	.765	.457	.148	.839	.530	.222	.914
56	.691	.381	.072	.763	.454	.145	.836	.526	.218	.909
57	.691	.380	.071	.761	.452	.142	.833	.522	.214	.905
58	.690	.379	.069	.759	.450	.139	.830	.519	.210	.900
59	.690	.379	.068	.758	.447	.137	.826	.515	.206	.895
60	1.689	3.378	5.067	6.756	8.445	10.134	11.823	13.512	15.201	16.890

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.003
5	.004
6	.006
7	.008
8	.011
9	.013
10	.017

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.301
2	4.602
3	6.902
4	9.203
5	11.504
6	13.805
7	16.106
8	18.406
9	20.707
10	23.008

TABLE X.—*Co-ordinates for projection of maps. Scale* $\frac{1}{31680}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
43 00	1.689	3.378	5.067	6.756	8.445	10.134	11.823	13.512	15.201	16.890
1	.689	.377	.066	.754	.443	.131	.820	.508	.197	.885
2	.688	.376	.064	.752	.441	.128	.817	.504	.193	.881
3	.688	.375	.063	.751	.438	.126	.813	.501	.189	.876
4	.687	.374	.061	.749	.436	.123	.810	.497	.185	.872
5	.687	.373	.060	.747	.434	.120	.807	.493	.181	.867
6	.686	.372	.058	.745	.431	.117	.804	.490	.177	.863
7	.686	.371	.057	.743	.429	.114	.801	.486	.173	.858
8	.685	.370	.056	.742	.427	.111	.797	.482	.169	.854
9	.685	.370	.054	.740	.425	.109	.794	.479	.165	.849
10	1.684	3.369	5.053	6.738	8.422	10.106	11.791	13.475	15.160	16.844
11	.684	.368	.051	.736	.420	.103	.788	.471	.156	.840
12	.683	.367	.050	.734	.418	.100	.785	.467	.152	.835
13	.683	.366	.048	.732	.415	.098	.782	.464	.147	.831
14	.683	.365	.047	.730	.413	.095	.778	.460	.143	.826
15	.682	.364	.045	.728	.411	.092	.775	.456	.139	.822
16	.682	.363	.044	.726	.408	.090	.772	.453	.135	.817
17	.681	.362	.042	.724	.406	.087	.769	.449	.131	.813
18	.681	.361	.041	.722	.404	.084	.765	.445	.126	.808
19	.681	.361	.040	.720	.402	.082	.762	.442	.122	.803
20	1.680	3.360	5.039	6.719	8.399	10.079	11.759	13.438	15.118	16.798
21	.680	.359	.037	.717	.397	.076	.756	.434	.114	.794
22	.679	.358	.036	.715	.395	.073	.753	.430	.110	.789
23	.679	.357	.035	.714	.392	.070	.749	.427	.106	.785
24	.678	.356	.033	.712	.390	.068	.746	.423	.102	.780
25	.678	.355	.032	.710	.388	.065	.743	.420	.098	.776
26	.677	.354	.031	.708	.385	.063	.739	.416	.093	.771
27	.677	.353	.029	.706	.383	.060	.736	.413	.089	.767
28	.676	.352	.028	.704	.381	.057	.733	.409	.085	.762
29	.676	.351	.027	.703	.378	.054	.729	.406	.081	.757
30	1.675	3.350	5.026	6.701	8.376	10.051	11.726	13.402	15.077	16.752
31	.675	.349	.024	.699	.374	.048	.723	.398	.073	.748
32	.674	.348	.023	.697	.372	.045	.720	.394	.069	.743
33	.674	.347	.021	.695	.369	.043	.716	.391	.065	.739
34	.674	.346	.020	.693	.367	.040	.713	.387	.061	.734
35	.673	.345	.018	.691	.365	.037	.710	.383	.057	.730
36	.673	.344	.017	.689	.363	.034	.707	.380	.053	.725
37	.672	.343	.015	.687	.360	.032	.704	.376	.049	.721
38	.672	.342	.014	.685	.358	.029	.700	.372	.045	.716
39	.672	.342	.013	.683	.356	.026	.697	.369	.040	.711
40	1.671	3.341	5.012	6.682	8.353	10.024	11.694	13.365	15.035	16.706
41	.671	.340	.010	.680	.351	.021	.691	.361	.031	.702
42	.670	.339	.009	.678	.349	.018	.688	.357	.027	.697
43	.670	.338	.007	.677	.346	.015	.684	.354	.023	.693
44	.669	.337	.006	.675	.344	.013	.681	.350	.019	.688
45	.669	.336	.004	.673	.342	.010	.678	.347	.015	.684
46	.668	.335	.003	.671	.339	.008	.675	.343	.011	.679
47	.668	.334	.002	.669	.337	.005	.672	.340	.007	.674
48	.667	.333	.000	.667	.335	.002	.668	.336	.003	.670
49	.667	.332	4.999	.666	.333	9.999	.665	.332	14.998	.665
50	1.666	3.332	4.998	6.664	8.330	9.996	11.662	13.328	14.994	16.660
51	.666	.331	.996	.662	.328	.993	.659	.324	.990	.655
52	.665	.330	.995	.660	.325	.990	.656	.320	.986	.650
53	.665	.329	.993	.658	.323	.988	.652	.316	.981	.646
54	.664	.328	.992	.656	.320	.985	.649	.313	.977	.641
55	.664	.327	.991	.654	.318	.982	.646	.309	.973	.636
56	.663	.326	.989	.652	.315	.979	.642	.305	.969	.632
57	.663	.325	.988	.650	.313	.976	.639	.301	.965	.627
58	.662	.324	.986	.648	.310	.974	.636	.297	.960	.623
59	.662	.323	.985	.646	.308	.971	.632	.294	.956	.618
60	1.661	3.323	4.984	6.645	8.306	9.968	11.629	13.290	14.952	16.613

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.003
5	.004
6	.006
7	.008
8	.011
9	.013
10	.017

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.301
2	4.602
3	6.904
4	9.205
5	11.506
6	13.807
7	16.108
8	18.410
9	20.711
10	23.012

TABLE X.—*Co-ordinates for projection of maps. Scale* $\frac{1}{31680}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
44 00	1.661	3.323	4.984	6.645	8.306	9.968	11.629	13.290	14.952	16.613
1	.661	.322	.983	.643	.304	.965	.626	.286	.948	.608
2	.660	.321	.982	.641	.302	.962	.623	.282	.944	.603
3	.660	.320	.980	.639	.299	.960	.619	.279	.939	.599
4	.660	.319	.979	.637	.297	.957	.616	.275	.935	.594
5	.659	.318	.978	.635	.296	.954	.613	.271	.931	.589
6	.659	.317	.976	.633	.292	.951	.609	.268	.926	.585
7	.658	.316	.975	.631	.290	.949	.606	.264	.922	.580
8	.658	.315	.973	.629	.287	.946	.603	.260	.918	.576
9	.658	.314	.972	.627	.285	.943	.599	.257	.913	.571
10	1.657	3.313	4.970	6.626	8.283	9.940	11.596	13.253	14.909	16.566
11	.657	.312	.969	.624	.281	.937	.593	.249	.905	.561
12	.656	.311	.967	.622	.278	.934	.590	.245	.901	.557
13	.656	.310	.966	.621	.276	.931	.586	.241	.897	.552
14	.655	.309	.964	.619	.274	.928	.583	.238	.892	.547
15	.655	.308	.963	.617	.271	.925	.580	.234	.888	.543
16	.654	.307	.962	.615	.269	.922	.576	.230	.884	.538
17	.654	.306	.960	.613	.267	.919	.573	.226	.880	.533
18	.653	.305	.959	.612	.264	.916	.569	.222	.875	.529
19	.653	.304	.957	.610	.262	.913	.566	.219	.871	.524
20	1.652	3.304	4.956	6.608	8.259	9.911	11.563	13.215	14.867	16.519
21	.652	.303	.954	.606	.257	.908	.560	.211	.863	.514
22	.651	.302	.953	.604	.255	.905	.557	.207	.859	.510
23	.651	.301	.951	.602	.252	.903	.553	.203	.855	.505
24	.650	.300	.950	.600	.250	.900	.550	.200	.850	.500
25	.650	.299	.949	.598	.247	.897	.547	.196	.846	.496
26	.649	.298	.947	.596	.245	.894	.543	.193	.842	.491
27	.649	.297	.946	.595	.243	.891	.539	.189	.838	.486
28	.648	.296	.944	.593	.240	.889	.536	.185	.833	.481
29	.648	.295	.943	.591	.238	.886	.533	.181	.829	.477
30	1.647	3.294	4.942	6.589	8.236	9.883	11.530	13.178	14.825	16.472
31	.647	.293	.940	.587	.234	.880	.527	.174	.821	.467
32	.646	.292	.939	.585	.231	.877	.524	.170	.817	.463
33	.646	.291	.937	.583	.229	.875	.520	.166	.812	.458
34	.645	.290	.936	.581	.226	.872	.517	.163	.808	.453
35	.645	.289	.934	.579	.224	.869	.514	.159	.804	.449
36	.644	.288	.933	.577	.221	.866	.510	.155	.799	.444
37	.644	.287	.931	.575	.219	.864	.507	.151	.795	.439
38	.643	.286	.930	.573	.217	.861	.504	.148	.791	.434
39	.643	.285	.928	.572	.214	.858	.500	.144	.786	.430
40	1.642	3.285	4.927	6.570	8.212	9.855	11.497	13.140	14.782	16.425
41	.642	.284	.925	.568	.210	.852	.494	.136	.778	.420
42	.641	.283	.924	.566	.208	.849	.491	.132	.774	.416
43	.641	.282	.922	.564	.205	.846	.488	.128	.770	.411
44	.641	.281	.921	.562	.203	.844	.484	.124	.765	.406
45	.640	.280	.920	.560	.201	.841	.481	.121	.761	.402
46	.640	.279	.918	.558	.198	.838	.478	.117	.757	.397
47	.639	.278	.917	.556	.196	.835	.475	.113	.753	.392
48	.639	.277	.915	.554	.193	.833	.471	.109	.748	.388
49	.639	.277	.914	.552	.191	.830	.468	.106	.744	.383
50	1.638	3.276	4.913	6.551	8.189	9.827	11.465	13.102	14.740	16.378
51	.638	.275	.912	.549	.187	.824	.462	.098	.736	.374
52	.637	.274	.910	.547	.185	.821	.459	.094	.732	.369
53	.637	.273	.909	.545	.182	.819	.455	.090	.728	.364
54	.636	.272	.908	.544	.180	.816	.452	.087	.724	.360
55	.636	.271	.906	.542	.177	.813	.448	.083	.720	.355
56	.635	.270	.905	.540	.175	.810	.445	.079	.716	.351
57	.635	.269	.904	.538	.173	.807	.441	.075	.712	.346
58	.634	.268	.902	.536	.170	.805	.438	.072	.708	.342
59	.634	.267	.901	.535	.168	.802	.435	.069	.704	.337
60	1.633	3.266	4.900	6.533	8.166	9.799	11.432	13.066	14.699	16.332

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.003
5	.004
6	.006
7	.008
8	.011
9	.013
10	.017

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.302
2	4.603
3	6.905
4	9.206
5	11.508
6	13.810
7	16.111
8	18.413
9	20.714
10	23.016

TABLE X.—*Co-ordinates for projection of maps. Scale $\frac{1}{31680}$.*

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
45 00	1.633	3.266	4.900	6.533	8.166	9.799	11.432	13.066	14.699	16.332
1	.633	.265	.899	.531	.164	.796	.429	.062	.695	.328
2	.632	.264	.897	.529	.162	.793	.426	.058	.691	.323
3	.632	.263	.896	.527	.160	.790	.422	.054	.686	.319
4	.631	.262	.894	.525	.157	.787	.419	.050	.682	.314
5	.631	.261	.893	.523	.155	.784	.416	.046	.678	.310
6	.630	.260	.891	.521	.153	.781	.412	.042	.673	.305
7	.630	.259	.890	.520	.150	.778	.409	.038	.669	.300
8	.629	.258	.888	.518	.148	.775	.406	.034	.665	.295
9	.629	.258	.887	.516	.145	.772	.403	.030	.660	.290
10	1.628	3.257	4.885	6.514	8.142	9.770	11.399	13.027	14.656	16.284
11	.628	.256	.884	.512	.140	.767	.396	.023	.652	.279
12	.627	.255	.883	.510	.137	.764	.392	.019	.648	.274
13	.627	.254	.881	.508	.135	.761	.389	.016	.643	.270
14	.627	.253	.880	.506	.132	.759	.385	.012	.639	.265
15	.626	.252	.878	.504	.130	.756	.382	.008	.634	.260
16	.626	.251	.877	.502	.128	.753	.378	.004	.630	.255
17	.625	.250	.875	.500	.125	.750	.375	.000	.625	.250
18	.625	.249	.874	.498	.123	.747	.371	12.997	.621	.246
19	.625	.248	.872	.496	.120	.744	.368	.993	.616	.241
20	1.624	3.247	4.871	6.494	8.118	9.742	11.365	12.989	14.612	16.236
21	.624	.246	.869	.492	.115	.739	.362	.985	.608	.231
22	.623	.245	.868	.490	.113	.736	.359	.981	.603	.226
23	.623	.244	.866	.488	.110	.733	.355	.977	.599	.221
24	.622	.243	.865	.486	.108	.730	.352	.973	.594	.217
25	.622	.242	.863	.484	.106	.727	.349	.970	.590	.212
26	.621	.241	.862	.482	.103	.724	.345	.966	.585	.207
27	.621	.240	.860	.480	.101	.721	.342	.962	.581	.202
28	.620	.239	.859	.478	.098	.718	.339	.958	.577	.198
29	.620	.239	.857	.476	.096	.715	.335	.954	.573	.193
30	1.619	3.238	4.856	6.475	8.094	9.713	11.332	12.950	14.569	16.188
31	.619	.237	.854	.473	.092	.710	.329	.946	.565	.183
32	.618	.236	.853	.471	.089	.707	.325	.942	.561	.178
33	.618	.235	.851	.469	.087	.704	.322	.939	.556	.173
34	.617	.234	.850	.468	.084	.701	.318	.935	.552	.169
35	.617	.233	.848	.466	.082	.698	.315	.931	.548	.164
36	.616	.232	.847	.464	.080	.695	.311	.927	.543	.159
37	.616	.231	.845	.462	.077	.692	.308	.923	.539	.154
38	.615	.230	.844	.460	.075	.689	.304	.920	.534	.150
39	.615	.229	.843	.458	.072	.686	.301	.916	.530	.145
40	1.614	3.228	4.842	6.456	8.070	9.684	11.298	12.912	14.526	16.140
41	.614	.227	.840	.454	.068	.681	.294	.908	.522	.135
42	.613	.226	.839	.452	.065	.678	.291	.904	.517	.130
43	.613	.225	.837	.450	.063	.675	.287	.900	.513	.126
44	.612	.224	.836	.448	.060	.672	.284	.897	.508	.121
45	.612	.223	.834	.447	.058	.669	.281	.893	.504	.116
46	.611	.222	.833	.445	.056	.666	.277	.889	.500	.111
47	.611	.221	.832	.443	.053	.663	.274	.885	.495	.106
48	.610	.220	.830	.441	.051	.660	.270	.881	.491	.102
49	.610	.219	.829	.439	.048	.657	.267	.877	.487	.097
50	1.609	3.218	4.828	6.437	8.046	9.655	11.264	12.874	14.483	16.092
51	.609	.217	.826	.435	.044	.652	.261	.870	.479	.087
52	.608	.216	.825	.433	.041	.649	.257	.866	.475	.082
53	.608	.215	.823	.431	.039	.646	.254	.863	.470	.078
54	.607	.214	.822	.429	.036	.643	.251	.859	.466	.073
55	.607	.213	.820	.427	.034	.640	.247	.855	.462	.068
56	.606	.212	.819	.426	.032	.637	.244	.851	.457	.064
57	.606	.211	.817	.424	.029	.634	.241	.847	.453	.059
58	.605	.210	.816	.422	.027	.631	.237	.844	.448	.054
59	.605	.210	.814	.420	.024	.629	.234	.840	.444	.050
60	1.604	3.209	4.813	6.418	8.022	9.627	11.231	12.836	14.440	16.045

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.003
5	.004
6	.006
7	.008
8	.011
9	.013
10	.017

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.302
2	4.604
3	6.906
4	9.208
5	11.510
6	13.812
7	16.114
8	18.416
9	20.718
10	23.020

TABLE X.—*Co-ordinates for projection of maps. Scale* $\frac{1}{31680}$.

[Derivation of table explained in section (5) use of table explained on page 22.

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
46 00	1.604	3.209	4.813	6.418	8.022	9.627	11.231	12.836	14.440	16.045
1	.604	.208	.812	.416	.020	.624	.227	.832	.436	.040
2	.603	.207	.811	.414	.017	.621	.224	.828	.431	.035
3	.603	.206	.809	.412	.015	.618	.220	.824	.427	.030
4	.603	.205	.808	.410	.012	.615	.217	.820	.422	.025
5	.602	.204	.807	.408	.010	.612	.214	.816	.418	.020
6	.602	.203	.805	.406	.008	.609	.210	.812	.414	.015
7	.602	.202	.804	.404	.005	.606	.207	.808	.409	.010
8	.601	.201	.802	.402	.003	.603	.204	.804	.405	.005
9	.601	.200	.801	.400	.000	.600	.200	.800	.400	.000
10	1.600	3.199	4.799	6.398	7.998	9.598	11.197	12.797	14.396	15.996
11	.600	.198	.798	.396	.996	.595	.194	.793	.392	.991
12	.599	.197	.796	.394	.994	.592	.191	.789	.388	.986
13	.599	.196	.795	.392	.991	.589	.187	.785	.383	.981
14	.598	.195	.793	.390	.989	.586	.184	.781	.379	.977
15	.598	.194	.792	.388	.986	.583	.181	.777	.375	.972
16	.597	.193	.790	.386	.984	.580	.177	.773	.370	.967
17	.597	.192	.789	.384	.981	.577	.174	.770	.366	.962
18	.596	.191	.787	.382	.979	.574	.171	.766	.362	.958
19	.596	.191	.786	.380	.976	.571	.168	.762	.357	.953
20	1.595	3.190	4.784	6.379	7.974	9.569	11.164	12.758	14.353	15.948
21	.595	.189	.783	.377	.972	.566	.161	.754	.349	.943
22	.594	.188	.781	.375	.969	.563	.158	.750	.344	.938
23	.594	.187	.780	.373	.967	.560	.154	.746	.340	.933
24	.593	.186	.779	.371	.964	.557	.151	.742	.335	.928
25	.593	.185	.777	.369	.962	.554	.147	.739	.331	.923
26	.592	.184	.776	.367	.959	.551	.144	.735	.327	.918
27	.592	.183	.774	.365	.957	.548	.140	.731	.322	.913
28	.591	.182	.773	.363	.954	.545	.137	.727	.318	.908
29	.591	.181	.771	.361	.952	.542	.133	.723	.313	.903
30	1.590	3.180	4.770	6.360	7.950	9.539	11.129	12.719	14.309	15.899
31	.590	.179	.768	.358	.948	.536	.126	.715	.305	.894
32	.589	.178	.767	.356	.945	.533	.123	.711	.301	.889
33	.589	.177	.765	.354	.943	.531	.120	.707	.296	.885
34	.588	.176	.764	.352	.940	.528	.116	.704	.292	.880
35	.588	.175	.762	.350	.938	.525	.113	.700	.288	.875
36	.587	.174	.761	.348	.935	.522	.110	.696	.283	.870
37	.587	.173	.759	.346	.933	.519	.106	.692	.279	.865
38	.586	.172	.758	.344	.930	.517	.103	.689	.275	.861
39	.586	.171	.756	.342	.928	.514	.100	.685	.270	.856
40	1.585	3.170	4.755	6.340	7.926	9.511	11.096	12.681	14.266	15.851
41	.585	.169	.753	.338	.923	.508	.093	.677	.262	.846
42	.584	.168	.752	.336	.921	.505	.089	.673	.257	.841
43	.584	.167	.750	.334	.918	.502	.086	.669	.253	.836
44	.583	.166	.749	.332	.916	.499	.082	.665	.248	.831
45	.583	.165	.747	.330	.913	.496	.079	.662	.244	.826
46	.582	.164	.746	.328	.911	.493	.075	.658	.240	.821
47	.582	.163	.745	.326	.908	.490	.072	.654	.235	.816
48	.581	.162	.743	.324	.906	.487	.068	.650	.231	.811
49	.581	.161	.742	.322	.903	.484	.065	.646	.226	.806
50	1.580	3.160	4.741	6.321	7.901	9.481	11.061	12.642	14.222	15.802
51	.580	.159	.739	.319	.899	.478	.058	.638	.218	.797
52	.579	.158	.738	.317	.896	.475	.054	.634	.214	.792
53	.579	.157	.736	.315	.894	.472	.051	.630	.209	.788
54	.578	.156	.735	.313	.891	.470	.048	.626	.205	.783
55	.578	.155	.733	.311	.889	.467	.045	.622	.201	.778
56	.577	.154	.732	.309	.886	.464	.041	.619	.196	.773
57	.577	.153	.730	.307	.884	.461	.038	.615	.192	.768
58	.576	.152	.729	.305	.881	.458	.035	.611	.188	.764
59	.576	.152	.727	.303	.879	.455	.031	.607	.183	.759
60	1.575	3.151	4.726	6.302	7.877	9.452	11.028	12.603	14.179	15.754

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.003
5	.004
6	.006
7	.008
8	.011
9	.013
10	.017

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.302
2	4.605
3	6.907
4	9.210
5	11.512
6	13.814
7	16.117
8	18.419
9	20.722
10	23.024

TABLE X.—*Co-ordinates for projection of maps. Scale* $\frac{1}{31680}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
47 00	1.575	3.151	4.726	6.302	7.877	9.452	11.028	12.603	14.179	15.754
1	.575	.150	.724	.300	.874	.449	.024	.599	.175	.749
2	.574	.149	.723	.298	.872	.446	.021	.595	.170	.744
3	.574	.148	.721	.296	.869	.443	.017	.591	.166	.739
4	.573	.147	.720	.294	.867	.440	.014	.587	.161	.734
5	.573	.146	.718	.292	.864	.437	.010	.583	.157	.729
6	.572	.145	.717	.290	.862	.434	.007	.579	.152	.724
7	.572	.144	.715	.288	.859	.431	.003	.575	.148	.719
8	.571	.143	.714	.286	.857	.428	.000	.571	.143	.714
9	.571	.142	.712	.284	.854	.425	10.996	.567	.139	.709
10	1.570	3.141	4.711	6.282	7.852	9.422	10.993	12.563	14.134	15.704
11	.570	.140	.709	.280	.849	.419	.989	.559	.130	.699
12	.569	.139	.708	.278	.847	.416	.986	.555	.125	.694
13	.569	.138	.706	.276	.844	.413	.982	.551	.121	.689
14	.568	.137	.705	.274	.842	.410	.979	.547	.116	.684
15	.568	.136	.703	.272	.839	.407	.975	.543	.112	.679
16	.567	.135	.702	.270	.837	.404	.972	.539	.107	.674
17	.567	.134	.700	.268	.834	.401	.968	.535	.103	.669
18	.566	.133	.699	.266	.832	.398	.965	.531	.098	.664
19	.566	.132	.697	.264	.829	.395	.961	.527	.094	.659
20	1.565	3.131	4.696	6.262	7.827	9.393	10.958	12.524	14.089	15.655
21	.565	.130	.694	.260	.824	.390	.954	.520	.085	.650
22	.564	.129	.693	.258	.822	.387	.951	.516	.080	.645
23	.564	.128	.691	.256	.819	.384	.947	.512	.076	.640
24	.563	.127	.690	.254	.817	.381	.944	.508	.071	.635
25	.563	.126	.688	.252	.814	.378	.940	.504	.067	.630
26	.562	.125	.687	.250	.812	.375	.937	.500	.062	.625
27	.562	.124	.685	.248	.809	.372	.933	.496	.058	.620
28	.561	.123	.684	.246	.807	.369	.930	.492	.053	.615
29	.561	.122	.682	.244	.804	.366	.926	.488	.049	.610
30	1.560	3.121	4.681	6.242	7.802	9.363	10.923	12.484	14.044	15.605
31	.560	.120	.679	.240	.799	.360	.919	.480	.040	.600
32	.559	.119	.678	.238	.796	.357	.916	.476	.035	.595
33	.559	.118	.676	.236	.794	.354	.912	.472	.031	.590
34	.559	.117	.675	.234	.792	.351	.909	.468	.026	.585
35	.558	.116	.673	.232	.789	.348	.905	.464	.022	.580
36	.558	.115	.672	.230	.787	.345	.902	.460	.017	.575
37	.557	.114	.670	.228	.784	.342	.899	.456	.013	.570
38	.557	.113	.669	.226	.782	.339	.895	.452	.009	.565
39	.557	.112	.668	.224	.780	.336	.892	.448	.004	.560
40	1.556	3.111	4.667	6.222	7.778	9.334	10.889	12.445	14.000	15.556
41	.556	.110	.665	.220	.775	.331	.885	.441	13.995	.551
42	.555	.109	.664	.218	.773	.328	.882	.437	.991	.546
43	.555	.108	.662	.216	.770	.325	.878	.433	.986	.541
44	.554	.107	.661	.214	.768	.322	.875	.429	.982	.536
45	.554	.106	.659	.212	.765	.319	.871	.425	.977	.531
46	.553	.105	.658	.210	.763	.316	.868	.421	.973	.526
47	.553	.104	.656	.208	.760	.313	.864	.417	.968	.521
48	.552	.103	.655	.206	.758	.310	.861	.413	.964	.516
49	.552	.102	.653	.204	.755	.307	.857	.409	.959	.511
50	1.551	3.101	4.652	6.202	7.753	9.304	10.854	12.405	13.955	15.506
51	.551	.100	.650	.200	.750	.301	.850	.401	.951	.501
52	.550	.099	.649	.198	.748	.298	.847	.397	.946	.496
53	.550	.098	.647	.196	.745	.295	.844	.393	.942	.491
54	.549	.097	.646	.194	.743	.292	.840	.389	.938	.486
55	.549	.096	.644	.192	.740	.289	.837	.385	.933	.481
56	.548	.095	.643	.190	.738	.286	.833	.381	.929	.476
57	.548	.094	.641	.188	.735	.283	.830	.377	.924	.471
58	.547	.093	.640	.186	.733	.280	.827	.373	.920	.466
59	.547	.092	.638	.184	.730	.277	.823	.369	.915	.461
60	1.546	3.091	4.637	6.183	7.728	9.274	10.820	12.366	13.911	15.457

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.003
5	.004
6	.006
7	.008
8	.011
9	.013
10	.017

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.303
2	4.606
3	6.908
4	9.211
5	11.514
6	13.817
7	16.120
8	18.422
9	20.725
10	23.028

TABLE X.—*Co-ordinates for projection of maps. Scale $\frac{1}{31680}$.*

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
48 00	1.546	3.091	4.637	6.183	7.728	9.274	10.820	12.366	13.911	15.457
1	.546	.090	.636	.181	.725	.271	.817	.362	.907	.452
2	.545	.089	.634	.179	.723	.268	.813	.358	.902	.447
3	.545	.088	.633	.177	.720	.265	.810	.354	.898	.442
4	.544	.087	.631	.175	.718	.262	.806	.350	.893	.437
5	.544	.086	.630	.173	.715	.259	.803	.346	.889	.432
6	.543	.085	.628	.171	.713	.256	.799	.342	.884	.427
7	.543	.084	.627	.169	.710	.253	.796	.338	.880	.422
8	.542	.083	.625	.167	.708	.250	.792	.334	.875	.417
9	.542	.082	.624	.165	.705	.247	.789	.330	.871	.412
10	1.541	3.081	4.622	6.163	7.703	9.244	10.785	12.326	13.866	15.407
11	.541	.080	.621	.161	.700	.241	.782	.322	.862	.402
12	.540	.079	.619	.159	.698	.238	.778	.318	.857	.397
13	.540	.078	.618	.157	.695	.235	.775	.314	.853	.392
14	.539	.077	.616	.155	.693	.232	.771	.310	.848	.387
15	.539	.076	.615	.153	.690	.229	.768	.306	.844	.382
16	.538	.075	.614	.151	.688	.226	.764	.302	.839	.377
17	.538	.074	.612	.149	.685	.223	.761	.298	.835	.372
18	.537	.073	.611	.147	.683	.220	.757	.294	.830	.367
19	.537	.072	.609	.145	.680	.217	.754	.290	.826	.362
20	1.536	3.071	4.607	6.143	7.678	9.214	10.750	12.286	13.821	15.357
21	.536	.070	.606	.141	.675	.211	.747	.282	.817	.352
22	.535	.069	.604	.139	.673	.208	.743	.278	.812	.347
23	.535	.068	.603	.137	.670	.205	.740	.274	.808	.342
24	.534	.067	.601	.135	.668	.202	.736	.270	.803	.337
25	.534	.066	.600	.133	.665	.199	.733	.266	.798	.332
26	.533	.065	.598	.131	.663	.196	.729	.262	.794	.327
27	.533	.064	.597	.129	.660	.193	.726	.258	.789	.322
28	.532	.063	.595	.127	.658	.190	.722	.254	.785	.317
29	.532	.062	.594	.125	.655	.187	.719	.250	.780	.312
30	1.531	3.061	4.592	6.123	7.653	9.184	10.715	12.246	13.776	15.307
31	.531	.060	.591	.121	.650	.181	.712	.242	.771	.302
32	.530	.059	.589	.119	.648	.178	.708	.238	.767	.297
33	.530	.058	.588	.117	.645	.175	.705	.234	.762	.292
34	.529	.057	.586	.115	.643	.172	.701	.230	.758	.287
35	.529	.056	.585	.113	.640	.169	.698	.226	.753	.282
36	.528	.055	.583	.111	.638	.166	.694	.222	.749	.277
37	.528	.054	.582	.109	.635	.163	.691	.218	.744	.272
38	.527	.053	.580	.107	.633	.160	.687	.214	.740	.267
39	.527	.052	.579	.105	.630	.157	.683	.210	.735	.262
40	1.526	3.051	4.577	6.103	7.628	9.154	10.680	12.206	13.731	15.257
41	.526	.050	.576	.101	.625	.151	.676	.202	.726	.252
42	.525	.049	.574	.099	.623	.148	.673	.198	.722	.247
43	.525	.048	.573	.097	.620	.145	.669	.194	.717	.242
44	.524	.047	.571	.095	.618	.142	.666	.190	.713	.237
45	.524	.046	.570	.093	.615	.139	.662	.186	.708	.232
46	.523	.045	.568	.091	.613	.136	.659	.182	.704	.227
47	.523	.044	.567	.089	.610	.133	.655	.178	.699	.222
48	.522	.043	.565	.087	.608	.130	.652	.174	.695	.217
49	.522	.042	.564	.085	.605	.127	.648	.170	.690	.212
50	1.521	3.041	4.562	6.083	7.603	9.124	10.645	12.166	13.686	15.207
51	.521	.040	.561	.081	.600	.121	.641	.162	.681	.202
52	.520	.039	.559	.079	.598	.118	.638	.158	.677	.197
53	.520	.038	.558	.077	.595	.115	.634	.154	.672	.192
54	.519	.037	.556	.075	.593	.112	.631	.150	.668	.187
55	.519	.036	.555	.073	.590	.109	.627	.146	.663	.182
56	.518	.035	.553	.071	.588	.106	.623	.142	.658	.177
57	.518	.034	.552	.069	.585	.103	.620	.138	.654	.172
58	.517	.033	.550	.067	.583	.100	.616	.134	.649	.167
59	.517	.032	.549	.065	.580	.097	.613	.130	.645	.162
60	1.516	3.031	4.547	6.062	7.578	9.094	10.609	12.125	13.640	15.156

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.003
5	.004
6	.006
7	.008
8	.011
9	.013
10	.017

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.303
2	4.606
3	6.910
4	9.213
5	11.516
6	13.819
7	16.122
8	18.426
9	20.729
10	23.032

TABLE X.—*Co-ordinates for projection of maps. Scale* $\frac{1}{31680}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
49 00	1.516	3.031	4.547	6.062	7.578	9.094	10.609	12.125	13.640	15.156
1	.516	.030	.545	.060	.575	.091	.606	.121	.635	.151
2	.515	.029	.544	.058	.573	.088	.602	.117	.631	.146
3	.515	.028	.542	.056	.570	.085	.599	.113	.626	.141
4	.514	.027	.541	.054	.568	.082	.595	.109	.622	.136
5	.514	.026	.539	.052	.565	.079	.592	.105	.617	.130
6	.513	.025	.538	.050	.563	.076	.588	.101	.613	.125
7	.513	.024	.536	.048	.560	.073	.585	.097	.608	.120
8	.512	.023	.535	.046	.558	.070	.581	.092	.604	.115
9	.512	.022	.533	.044	.555	.066	.578	.088	.599	.110
10	1.511	3.021	4.532	6.042	7.553	9.063	10.574	12.084	13.595	15.105
11	.511	.020	.530	.040	.550	.060	.571	.080	.590	.100
12	.510	.019	.529	.038	.548	.057	.567	.076	.586	.095
13	.510	.018	.527	.036	.545	.054	.564	.072	.581	.090
14	.509	.017	.526	.034	.543	.051	.560	.067	.576	.085
15	.508	.016	.524	.032	.540	.047	.557	.063	.572	.079
16	.508	.015	.523	.030	.537	.044	.553	.059	.567	.074
17	.507	.014	.521	.028	.534	.041	.549	.055	.563	.069
18	.507	.013	.520	.026	.532	.038	.546	.051	.558	.064
19	.506	.012	.518	.024	.529	.035	.542	.047	.554	.059
20	1.505	3.011	4.516	6.022	7.527	9.032	10.538	12.043	13.549	15.054
21	.505	.010	.515	.020	.524	.029	.535	.039	.544	.049
22	.504	.009	.513	.018	.521	.026	.531	.035	.540	.044
23	.504	.008	.512	.016	.519	.023	.528	.030	.535	.039
24	.503	.007	.510	.014	.516	.020	.524	.026	.531	.034
25	.503	.006	.509	.012	.514	.017	.520	.022	.526	.028
26	.502	.005	.507	.010	.511	.014	.517	.018	.522	.023
27	.502	.004	.506	.008	.509	.011	.513	.014	.517	.018
28	.501	.003	.504	.005	.506	.008	.509	.010	.513	.013
29	.501	.002	.503	.003	.504	.005	.505	.006	.508	.008
30	1.500	3.001	4.501	6.001	7.502	9.002	10.502	12.002	13.503	15.003
31	.500	.000	.500	5.999	.499	8.999	.499	11.998	.499	14.998
32	.499	2.999	.498	.997	.497	.996	.495	.994	.494	.993
33	.499	.998	.497	.995	.494	.993	.491	.990	.490	.988
34	.498	.997	.495	.993	.492	.990	.488	.986	.485	.983
35	.498	.996	.494	.991	.489	.987	.484	.982	.480	.978
36	.497	.995	.492	.989	.486	.984	.481	.978	.476	.972
37	.497	.994	.491	.987	.484	.981	.477	.974	.471	.967
38	.496	.993	.489	.985	.481	.978	.474	.970	.467	.962
39	.496	.992	.488	.983	.479	.975	.470	.966	.462	.957
40	1.495	2.990	4.486	5.981	7.476	8.971	10.466	11.962	13.457	14.952
41	.495	.989	.485	.979	.474	.968	.463	.958	.453	.947
42	.494	.988	.483	.977	.471	.965	.459	.954	.448	.942
43	.494	.987	.482	.975	.469	.962	.456	.950	.444	.937
44	.493	.986	.480	.973	.466	.959	.452	.946	.439	.932
45	.493	.985	.479	.970	.464	.956	.449	.942	.434	.926
46	.492	.984	.477	.968	.461	.953	.445	.938	.430	.921
47	.492	.983	.476	.966	.459	.950	.442	.934	.425	.916
48	.491	.982	.474	.964	.456	.947	.438	.930	.421	.911
49	.491	.981	.472	.962	.453	.944	.435	.926	.416	.906
50	1.490	2.980	4.470	5.960	7.450	8.941	10.431	11.921	13.411	14.901
51	.490	.979	.469	.958	.448	.938	.428	.917	.407	.896
52	.489	.978	.467	.956	.445	.935	.424	.913	.402	.891
53	.489	.977	.466	.954	.443	.932	.421	.909	.398	.886
54	.488	.976	.464	.952	.440	.929	.417	.905	.393	.881
55	.488	.975	.463	.950	.438	.926	.414	.901	.389	.876
56	.487	.974	.461	.948	.435	.923	.410	.897	.384	.871
57	.487	.973	.460	.946	.433	.920	.407	.893	.380	.866
58	.486	.972	.458	.944	.430	.917	.403	.889	.375	.861
59	.486	.971	.457	.942	.428	.914	.400	.885	.371	.856
60	1.485	2.970	4.455	5.940	7.425	8.911	10.396	11.881	13.366	14.851

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.003
5	.004
6	.006
7	.008
8	.011
9	.013
10	.017

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.304
2	4.607
3	6.911
4	9.214
5	11.518
6	13.822
7	16.125
8	18.429
9	20.732
10	23.036

TABLE XI.—*Co-ordinates for projection of maps. Scale* $\frac{1}{30000}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
25 00	2.208	4.416	6.624	8.832	11.040	13.249	15.457	17.665	19.873	22.081
01	.208	.416	.623	.831	.039	.247	.455	.662	.870	.078
02	.208	.415	.623	.830	.038	.245	.453	.660	.868	.075
03	.207	.414	.622	.829	.036	.243	.450	.658	.865	.072
04	.207	.414	.621	.828	.034	.241	.448	.655	.862	.069
05	.207	.413	.620	.826	.033	.240	.446	.653	.859	.066
06	.206	.413	.619	.825	.032	.238	.444	.650	.857	.063
07	.206	.412	.618	.824	.030	.236	.442	.648	.854	.060
08	.206	.411	.617	.823	.028	.234	.440	.646	.851	.057
09	.205	.411	.616	.822	.027	.232	.438	.643	.849	.054
10	2.205	4.410	6.615	8.820	11.025	13.231	15.436	17.641	19.846	22.051
11	.205	.410	.614	.819	.024	.229	.434	.638	.843	.048
12	.204	.409	.613	.818	.022	.227	.431	.636	.840	.045
13	.204	.408	.613	.817	.021	.225	.429	.634	.838	.042
14	.204	.408	.612	.816	.019	.223	.427	.631	.835	.039
15	.204	.407	.611	.814	.018	.222	.425	.629	.832	.036
16	.203	.406	.610	.813	.016	.219	.422	.626	.829	.032
17	.203	.406	.609	.812	.014	.217	.420	.623	.826	.029
18	.203	.405	.608	.810	.013	.216	.418	.621	.823	.026
19	.202	.405	.607	.809	.011	.214	.416	.618	.821	.023
20	2.202	4.404	6.606	8.808	11.010	13.212	15.414	17.616	19.818	22.020
21	.202	.403	.605	.807	.008	.210	.412	.614	.815	.017
22	.201	.403	.604	.806	.007	.208	.410	.611	.813	.014
23	.201	.402	.603	.804	.005	.207	.408	.609	.810	.011
24	.201	.402	.602	.803	.004	.205	.406	.606	.807	.008
25	.200	.401	.601	.802	.002	.203	.403	.604	.804	.005
26	.200	.400	.601	.801	.001	.201	.401	.602	.802	.002
27	.200	.400	.600	.800	10.999	.199	.399	.599	.799	21.999
28	.200	.399	.599	.798	.998	.198	.397	.597	.796	.996
29	.199	.399	.598	.797	.996	.196	.395	.594	.794	.993
30	2.199	4.398	6.597	8.796	10.995	13.194	15.393	17.592	19.791	21.990
31	.199	.397	.596	.795	.993	.192	.391	.590	.788	.987
32	.198	.397	.595	.794	.992	.190	.389	.587	.786	.984
33	.198	.396	.594	.792	.990	.189	.387	.585	.783	.981
34	.198	.396	.593	.791	.989	.187	.385	.582	.780	.978
35	.197	.395	.592	.790	.987	.185	.382	.580	.777	.975
36	.197	.394	.592	.789	.986	.183	.380	.578	.775	.972
37	.197	.394	.591	.788	.984	.181	.378	.575	.772	.969
38	.197	.393	.590	.786	.983	.180	.376	.573	.769	.966
39	.196	.393	.589	.785	.981	.178	.374	.570	.767	.963
40	2.196	4.392	6.588	8.784	10.980	13.176	15.372	17.568	19.764	21.960
41	.196	.391	.587	.783	.978	.174	.370	.566	.761	.957
42	.195	.391	.586	.782	.977	.172	.368	.563	.759	.954
43	.195	.390	.585	.780	.975	.171	.366	.561	.756	.951
44	.195	.390	.584	.779	.974	.169	.364	.558	.753	.948
45	.194	.389	.583	.778	.972	.167	.361	.556	.750	.945
46	.194	.388	.582	.776	.970	.165	.359	.553	.747	.941
47	.194	.388	.581	.775	.969	.163	.357	.550	.744	.938
48	.193	.387	.580	.774	.967	.161	.354	.548	.741	.935
49	.193	.386	.580	.773	.966	.159	.352	.546	.739	.932
50	2.193	4.386	6.579	8.772	10.964	13.157	15.350	17.543	19.736	21.929
51	.193	.385	.578	.770	.963	.156	.348	.541	.733	.926
52	.192	.385	.577	.769	.961	.154	.346	.538	.731	.923
53	.192	.384	.576	.768	.960	.152	.344	.536	.728	.920
54	.192	.383	.575	.767	.959	.150	.342	.534	.725	.917
55	.191	.383	.574	.766	.957	.148	.340	.531	.723	.914
56	.191	.382	.573	.764	.955	.147	.338	.529	.720	.911
57	.191	.382	.572	.763	.954	.145	.336	.526	.717	.908
58	.190	.381	.571	.762	.952	.143	.333	.524	.714	.905
59	.190	.380	.571	.761	.951	.141	.331	.522	.712	.902
60	2.190	4.380	6.570	8.760	10.949	13.139	15.329	17.519	19.709	21.899

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.002
5	.003
6	.005
7	.007
8	.009
9	.011
10	.014

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.423
2	4.846
3	7.268
4	9.691
5	12.114
6	14.537
7	16.960
8	19.382
9	21.805
10	24.228

Table XI.—*Co-ordinates for projection of maps. Scale* $\frac{1}{30000}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
26 00	2.190	4.380	6.570	8.760	10.949	13.139	15.329	17.519	19.709	21.899
1	.190	.379	.569	.758	.948	.138	.327	.517	.706	.896
2	.189	.379	.568	.757	.946	.136	.325	.514	.704	.893
3	.189	.378	.567	.756	.944	.133	.322	.511	.700	.889
4	.189	.377	.566	.754	.943	.132	.320	.509	.697	.886
5	.188	.377	.565	.753	.941	.130	.318	.506	.695	.883
6	.188	.376	.564	.752	.940	.128	.316	.504	.692	.880
7	.188	.375	.563	.751	.938	.126	.314	.502	.689	.877
8	.187	.375	.562	.750	.937	.124	.312	.499	.687	.874
9	.187	.374	.561	.748	.935	.123	.310	.497	.684	.871
10	2.187	4.373	6.560	8.747	10.933	13.120	15.307	17.494	19.680	21.867
11	.186	.373	.559	.746	.932	.118	.305	.491	.678	.864
12	.186	.372	.558	.744	.930	.117	.303	.489	.675	.861
13	.186	.372	.557	.743	.929	.115	.301	.486	.672	.858
14	.185	.371	.556	.742	.927	.113	.298	.484	.669	.855
15	.185	.370	.556	.741	.926	.111	.296	.482	.667	.852
16	.185	.370	.555	.740	.925	.109	.294	.479	.664	.849
17	.184	.369	.553	.738	.922	.107	.291	.476	.660	.845
18	.184	.368	.553	.737	.921	.105	.289	.474	.658	.842
19	.184	.368	.552	.736	.919	.103	.287	.471	.655	.839
20	2.184	4.367	6.551	8.734	10.918	13.102	15.285	17.469	19.652	21.836
21	.183	.367	.550	.733	.916	.100	.283	.466	.650	.833
22	.183	.366	.549	.732	.915	.098	.281	.464	.647	.830
23	.183	.365	.548	.731	.913	.096	.279	.462	.644	.827
24	.182	.365	.547	.729	.912	.094	.276	.458	.641	.823
25	.182	.364	.546	.728	.910	.092	.274	.456	.638	.820
26	.182	.363	.545	.727	.908	.090	.272	.454	.635	.817
27	.181	.363	.544	.726	.907	.088	.270	.451	.633	.814
28	.181	.362	.543	.724	.905	.087	.268	.449	.630	.811
29	.181	.362	.542	.723	.904	.085	.266	.446	.627	.808
30	2.180	4.361	6.541	8.722	10.902	13.083	15.263	17.444	19.624	21.805
31	.180	.360	.540	.720	.900	.081	.261	.441	.621	.801
32	.180	.360	.539	.719	.899	.079	.259	.438	.618	.798
33	.179	.359	.538	.718	.897	.077	.256	.436	.615	.795
34	.179	.358	.538	.717	.896	.075	.254	.434	.613	.792
35	.179	.358	.537	.716	.894	.073	.252	.431	.610	.789
36	.179	.357	.536	.714	.893	.072	.250	.429	.607	.786
37	.178	.357	.535	.713	.891	.070	.248	.426	.605	.783
38	.178	.356	.534	.712	.889	.067	.245	.423	.601	.779
39	.178	.355	.533	.710	.888	.066	.243	.420	.598	.776
40	2.177	4.355	6.532	8.709	10.886	13.064	15.241	17.418	19.596	21.773
41	.177	.354	.531	.708	.885	.062	.239	.416	.593	.770
42	.177	.353	.530	.707	.883	.060	.237	.414	.590	.767
43	.176	.353	.529	.706	.882	.058	.235	.411	.588	.764
44	.176	.352	.528	.704	.880	.057	.233	.409	.585	.761
45	.176	.351	.527	.703	.878	.054	.230	.406	.581	.757
46	.175	.351	.526	.702	.877	.052	.228	.403	.579	.754
47	.175	.350	.525	.700	.875	.051	.226	.401	.576	.751
48	.175	.350	.524	.699	.874	.049	.224	.398	.573	.748
49	.175	.349	.523	.698	.872	.047	.221	.396	.570	.745
50	2.174	4.348	6.523	8.697	10.871	13.045	15.219	17.394	19.568	21.742
51	.174	.348	.522	.696	.869	.043	.217	.391	.565	.739
52	.173	.347	.520	.694	.867	.041	.214	.388	.561	.735
53	.173	.346	.519	.692	.865	.039	.212	.385	.558	.731
54	.173	.346	.519	.692	.864	.037	.210	.383	.556	.729
55	.173	.345	.518	.690	.863	.036	.208	.381	.553	.726
56	.172	.345	.517	.689	.861	.034	.206	.378	.551	.723
57	.172	.344	.516	.688	.860	.032	.204	.376	.548	.720
58	.172	.343	.515	.687	.858	.030	.202	.374	.545	.717
59	.171	.343	.514	.686	.857	.028	.200	.371	.543	.714
60	2.171	4.342	6.513	8.684	10.855	13.026	15.197	17.368	19.539	21.710

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.002
5	.003
6	.005
7	.007
8	.009
9	.011
10	.014

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.423
2	4.846
3	7.269
4	9.692
5	12.116
6	14.539
7	16.962
8	19.385
9	21.808
10	24.231

TABLE XI.—*Co-ordinates for projection of maps. Scale* $\frac{1}{30000}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.										Longitude interval.	Ordinates of developed parallel.
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.		
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	′	*Inches.*
27 00	2.171	4.342	6.513	8.684	10.855	13.026	15.197	17.368	19.539	21.710	1	0.000
01	.171	.341	.512	.683	.853	.024	.195	.366	.536	.707	2	.001
02	.170	.341	.511	.682	.852	.022	.193	.363	.534	.704	3	.001
03	.170	.340	.510	.680	.850	.021	.191	.361	.531	.701	4	.002
04	.170	.339	.509	.679	.848	.018	.188	.358	.527	.697	5	.004
05	.169	.339	.508	.678	.847	.016	.186	.355	.525	.694	6	.005
											7	.007
06	.169	.338	.507	.676	.845	.015	.184	.353	.522	.691	8	.009
07	.169	.338	.506	.675	.844	.013	.182	.350	.519	.688	9	.012
08	.168	.337	.505	.674	.842	.010	.179	.347	.516	.684	10	.014
09	.168	.336	.504	.672	.840	.009	.177	.345	.513	.681		
10	2.168	4.336	6.503	8.671	10.839	13.007	15.175	17.342	19.510	21.678		
11	.167	.335	.502	.670	.837	.005	.172	.340	.507	.675		
12	.167	.334	.501	.668	.835	.003	.170	.337	.504	.671		
13	.167	.334	.500	.667	.834	.001	.168	.334	.501	.668		
14	.166	.333	.499	.666	.832	12.999	.165	.332	.498	.665		
15	.166	.332	.499	.665	.831	.997	.163	.330	.496	.662		
16	.166	.332	.497	.663	.829	.995	.161	.326	.492	.658		
17	.165	.331	.496	.662	.827	.993	.158	.324	.489	.655		
18	.165	.330	.496	.661	.826	.991	.156	.322	.487	.652		
19	.165	.330	.495	.660	.824	.989	.154	.319	.484	.649		
20	2.164	4.329	6.493	8.658	10.822	12.987	15.151	17.316	19.480	21.645		
21	.164	.328	.492	.656	.820	.985	.149	.313	.477	.641		
22	.164	.328	.491	.655	.819	.983	.147	.310	.474	.638		
23	.163	.327	.490	.654	.817	.981	.144	.308	.471	.635		
24	.163	.326	.489	.652	.815	.979	.142	.305	.468	.631		
25	.163	.326	.488	.651	.814	.977	.140	.302	.465	.628		
26	.162	.325	.487	.650	.812	.975	.137	.300	.462	.625		
27	.162	.324	.487	.649	.811	.973	.135	.298	.460	.622		
28	.162	.324	.485	.647	.809	.971	.133	.294	.456	.618		
29	.161	.323	.484	.646	.807	.969	.130	.292	.453	.615		
30	2.161	4.322	6.484	8.645	10.806	12.967	15.128	17.290	19.451	21.612		
31	.161	.322	.483	.644	.804	.965	.126	.287	.448	.609		
32	.160	.321	.481	.642	.802	.963	.123	.284	.444	.605		
33	.160	.320	.481	.641	.801	.961	.121	.282	.442	.602		
34	.160	.320	.480	.640	.799	.959	.119	.279	.439	.599		
35	.160	.319	.479	.638	.798	.958	.117	.277	.436	.596		
36	.159	.318	.478	.637	.796	.955	.114	.274	.433	.592		
37	.159	.318	.477	.636	.794	.953	.112	.271	.430	.589		
38	.159	.317	.476	.634	.793	.952	.110	.269	.427	.586		
39	.158	.317	.475	.633	.791	.950	.108	.266	.425	.583		
40	2.158	4.316	6.474	8.632	10.789	12.947	15.105	17.263	19.421	21.579		
41	.158	.315	.473	.630	.788	.946	.103	.261	.418	.576		
42	.157	.315	.472	.629	.786	.944	.101	.258	.416	.573		
43	.157	.314	.471	.628	.785	.942	.099	.256	.413	.570		
44	.157	.313	.470	.626	.783	.940	.096	.253	.409	.566	Latitude interval.	Meridional distances.
45	.156	.313	.469	.625	.781	.938	.094	.250	.407	.563		
46	.156	.312	.468	.624	.780	.936	.092	.248	.404	.560		
47	.156	.311	.467	.623	.778	.934	.090	.246	.401	.557		
48	.155	.311	.466	.621	.776	.932	.087	.242	.398	.553		
49	.155	.310	.465	.620	.775	.930	.085	.240	.395	.550		
50	2.155	4.309	6.464	8.619	10.774	12.928	15.083	17.238	19.392	21.547		*Inches.*
51	.154	.309	.463	.618	.772	.926	.081	.235	.390	.544	′	
52	.154	.308	.462	.616	.770	.924	.078	.232	.386	.540	1	2.423
53	.154	.307	.461	.615	.768	.922	.076	.230	.383	.537	2	4.847
54	.153	.307	.460	.614	.767	.920	.074	.227	.381	.534	3	7.270
55	.153	.306	.459	.612	.765	.919	.072	.225	.378	.531	4	9.694
											5	12.117
56	.153	.305	.458	.611	.763	.916	.069	.222	.374	.527	6	14.541
57	.152	.305	.457	.610	.762	.914	.067	.219	.372	.524	7	16.964
58	.152	.304	.456	.608	.760	.913	.065	.217	.369	.521	8	19.388
59	.152	.304	.455	.607	.759	.911	.063	.214	.366	.518	9	21.811
60	2.151	4.303	6.454	8.606	10.757	12.908	15.060	17.211	19.363	21.514	10	24.235

TABLE XI.—*Co-ordinates for projection of maps. Scale* $\frac{1}{30000}$.

Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
28 00	2.151	4.303	6.454	8.606	10.757	12.908	15.060	17.211	19.363	21.514
1	.151	.302	.453	.604	.755	.907	.058	.209	.360	.511
2	.151	.302	.452	.603	.754	.905	.056	.206	.357	.508
3	.150	.301	.451	.602	.752	.902	.053	.203	.354	.504
4	.150	.300	.450	.600	.750	.901	.051	.201	.351	.501
5	.150	.300	.449	.599	.749	.899	.049	.198	.348	.498
6	.149	.299	.448	.598	.747	.896	.046	.195	.345	.494
7	.149	.298	.447	.596	.745	.895	.044	.193	.342	.491
8	.149	.298	.446	.595	.744	.893	.042	.190	.339	.488
9	.148	.297	.445	.594	.742	.890	.039	.187	.336	.484
10	2.148	4.296	6.444	8.592	10.740	12.889	15.037	17.185	19.333	21.481
11	.148	.296	.443	.591	.739	.887	.035	.182	.330	.478
12	.147	.295	.442	.590	.737	.884	.032	.179	.327	.474
13	.147	.294	.441	.588	.735	.883	.030	.177	.324	.471
14	.147	.294	.440	.587	.734	.881	.028	.174	.321	.468
15	.146	.293	.439	.586	.732	.878	.025	.171	.318	.464
16	.146	.292	.438	.584	.730	.877	.023	.169	.315	.461
17	.146	.292	.437	.583	.729	.875	.021	.166	.312	.458
18	.145	.291	.436	.582	.727	.872	.018	.163	.309	.454
19	.145	.290	.435	.580	.725	.871	.016	.161	.306	.451
20	2.145	4.290	6.434	8.579	10.724	12.869	15.014	17.158	19.303	21.448
21	.144	.289	.433	.578	.722	.866	.011	.155	.300	.444
22	.144	.288	.432	.576	.720	.865	.009	.153	.297	.441
23	.144	.288	.431	.575	.719	.863	.007	.150	.294	.438
24	.143	.287	.430	.574	.717	.860	.004	.147	.291	.434
25	.143	.286	.429	.572	.715	.859	.002	.145	.288	.431
26	.143	.286	.428	.571	.714	.857	.000	.142	.285	.428
27	.142	.285	.427	.570	.712	.854	14.997	.139	.282	.424
28	.142	.284	.426	.568	.710	.853	.995	.137	.279	.421
29	.142	.284	.425	.567	.709	.851	.993	.134	.276	.418
30	2.141	4.283	6.424	8.566	10.707	12.848	14.990	17.131	19.273	21.414
31	.141	.282	.423	.564	.705	.846	.987	.128	.269	.410
32	.141	.281	.422	.563	.703	.844	.985	.126	.266	.407
33	.140	.281	.421	.561	.701	.842	.982	.122	.263	.403
34	.140	.280	.420	.560	.700	.840	.980	.120	.260	.400
35	.140	.279	.419	.559	.698	.838	.978	.118	.257	.397
36	.139	.279	.418	.557	.696	.836	.975	.114	.254	.393
37	.139	.278	.417	.556	.695	.834	.973	.112	.251	.390
38	.139	.277	.416	.555	.693	.832	.971	.110	.248	.387
39	.138	.277	.415	.553	.691	.830	.968	.106	.245	.383
40	2.138	4.276	6.414	8.552	10.690	12.828	14.966	17.104	19.242	21.380
41	.138	.275	.413	.551	.688	.826	.964	.102	.239	.377
42	.137	.275	.412	.549	.686	.824	.961	.098	.236	.373
43	.137	.274	.411	.548	.685	.822	.959	.096	.233	.370
44	.137	.273	.410	.547	.683	.820	.957	.094	.230	.367
45	.136	.273	.409	.545	.681	.818	.954	.090	.227	.363
46	.136	.272	.408	.544	.680	.816	.952	.088	.224	.360
47	.136	.271	.407	.543	.678	.814	.950	.086	.221	.357
48	.135	.271	.406	.541	.676	.812	.947	.082	.218	.353
49	.135	.270	.405	.540	.675	.810	.945	.080	.215	.350
50	2.135	4.269	6.404	8.539	10.673	12.808	14.943	17.078	19.212	21.347
51	.134	.269	.403	.537	.671	.806	.940	.074	.209	.343
52	.134	.268	.402	.536	.670	.804	.938	.072	.206	.340
53	.134	.267	.401	.535	.668	.802	.936	.070	.203	.337
54	.133	.267	.400	.533	.666	.800	.933	.066	.200	.333
55	.133	.266	.399	.532	.665	.798	.931	.064	.197	.330
56	.133	.265	.398	.531	.663	.796	.929	.062	.194	.327
57	.132	.265	.397	.529	.661	.794	.926	.058	.191	.323
58	.132	.264	.396	.528	.660	.792	.924	.056	.188	.320
59	.132	.263	.395	.527	.658	.790	.922	.054	.185	.317
60	2.131	4.263	6.394	8.525	10.656	12.788	14.919	17.050	19.182	21.313

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.002
5	.004
6	.005
7	.007
8	.009
9	.012
10	.015

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.424
2	4.848
3	7.271
4	9.695
5	12.119
6	14.543
7	16.967
8	19.390
9	21.814
10	24.238

TABLE XI.—*Co-ordinates for projections of maps. Scale $\frac{1}{30000}$.*

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
29 00	2.131	4.263	6.394	8.525	10.656	12.788	14.919	17.050	19.182	21.313
01	.131	.262	.393	.524	.655	.786	.917	.048	.179	.310
02	.131	.261	.392	.522	.653	.784	.914	.045	.175	.306
03	.130	.261	.391	.521	.651	.782	.912	.042	.173	.303
04	.130	.260	.390	.520	.649	.779	.909	.039	.169	.299
05	.130	.259	.389	.518	.648	.778	.907	.037	.166	.296
06	.129	.258	.388	.517	.646	.775	.904	.034	.163	.292
07	.129	.258	.387	.516	.644	.773	.902	.031	.160	.289
08	.128	.257	.385	.514	.642	.771	.899	.028	.156	.285
09	.128	.256	.385	.513	.641	.769	.897	.026	.154	.282
10	2.128	4.256	6.383	8.511	10.639	12.767	14.895	17.022	19.150	21.278
11	.127	.255	.382	.510	.637	.765	.892	.020	.147	.275
12	.127	.254	.381	.508	.635	.763	.890	.017	.144	.271
13	.127	.254	.380	.507	.634	.761	.888	.014	.141	.268
14	.126	.253	.379	.506	.632	.758	.885	.011	.138	.264
15	.126	.252	.378	.504	.630	.757	.883	.009	.135	.261
16	.126	.251	.377	.503	.628	.754	.880	.006	.131	.257
17	.125	.251	.376	.502	.627	.752	.878	.003	.129	.254
18	.125	.250	.375	.500	.625	.750	.875	.000	.125	.250
19	.125	.249	.374	.499	.623	.748	.873	16.998	.122	.247
20	2.124	4.249	6.373	8.497	10.621	12.746	14.870	16.904	19.119	21.243
21	.124	.248	.372	.496	.620	.744	.868	.992	.116	.240
22	.124	.247	.371	.494	.618	.742	.865	.989	.112	.236
23	.123	.247	.370	.493	.616	.740	.863	.986	.110	.233
24	.123	.246	.369	.492	.614	.737	.860	.983	.106	.229
25	.123	.245	.368	.490	.613	.736	.858	.981	.103	.226
26	.122	.244	.367	.489	.611	.733	.855	.978	.100	.222
27	.122	.244	.366	.488	.609	.731	.853	.975	.097	.219
28	.121	.243	.364	.486	.607	.729	.850	.972	.093	.215
29	.121	.242	.364	.485	.606	.727	.848	.970	.091	.212
30	2.121	4.242	6.363	8.484	10.604	12.725	14.846	16.967	19.088	21.209
31	.121	.241	.362	.482	.603	.724	.844	.965	.085	.206
32	.120	.240	.361	.481	.601	.721	.841	.962	.082	.202
33	.120	.240	.360	.480	.599	.719	.839	.959	.079	.199
34	.119	.239	.358	.478	.597	.717	.836	.956	.075	.195
35	.119	.238	.358	.477	.596	.715	.834	.954	.073	.192
36	.119	.238	.356	.475	.594	.713	.832	.950	.069	.188
37	.118	.237	.355	.474	.592	.711	.829	.948	.066	.185
38	.118	.236	.354	.472	.590	.709	.827	.945	.063	.181
39	.118	.236	.353	.471	.589	.707	.825	.942	.060	.178
40	2.117	4.235	6.352	8.470	10.587	12.704	14.822	16.939	19.057	21.174
41	.117	.234	.351	.468	.585	.703	.820	.937	.054	.171
42	.117	.233	.350	.467	.583	.700	.817	.934	.050	.167
43	.116	.233	.349	.466	.582	.698	.815	.931	.048	.164
44	.116	.232	.348	.464	.580	.696	.812	.928	.044	.160
45	.116	.231	.347	.463	.578	.694	.810	.926	.041	.157
46	.115	.231	.346	.461	.576	.692	.807	.922	.038	.153
47	.115	.230	.345	.460	.575	.690	.805	.920	.035	.150
48	.115	.229	.344	.458	.573	.688	.802	.917	.031	.146
49	.114	.229	.343	.457	.571	.686	.800	.914	.029	.143
50	2.114	4.228	6.342	8.456	10.569	12.683	14.797	16.911	19.025	21.139
51	.114	.227	.341	.454	.568	.682	.795	.909	.022	.136
52	.113	.226	.340	.453	.566	.679	.792	.906	.019	.132
53	.113	.226	.339	.452	.564	.677	.790	.903	.016	.129
54	.112	.225	.337	.450	.562	.675	.787	.900	.012	.125
55	.112	.224	.337	.449	.561	.673	.785	.898	.010	.122
56	.112	.224	.335	.447	.559	.671	.783	.894	.006	.118
57	.111	.223	.334	.446	.557	.669	.780	.892	.003	.115
58	.111	.222	.333	.444	.555	.667	.778	.889	.000	.111
59	.111	.222	.332	.443	.554	.665	.776	.886	18.997	.108
60	2.110	4.221	6.331	8.442	10.552	12.662	14.773	16.883	18.994	21.104

Longitude interval.	Ordinates of developed parallel.
	Inches.
1	0.000
2	.001
3	.001
4	.002
5	.004
6	.005
7	.007
8	.010
9	.012
10	.015

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.424
2	4.848
3	7.273
4	9.697
5	12.121
6	14.545
7	16.969
8	19.394
9	21.818
10	24.242

TABLE XI.—*Co-ordinates for projection of maps. Scale* $\frac{1}{30000}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
30 00	2.110	4.221	6.331	8.442	10.552	12.662	14.773	16.883	18.994	21.104
01	.110	.220	.330	.440	.550	.660	.770	.880	.990	.100
02	.110	.219	.329	.439	.548	.658	.768	.878	.987	.097
03	.109	.219	.328	.437	.546	.656	.765	.874	.984	.093
04	.109	.218	.327	.436	.545	.654	.763	.872	.981	.090
05	.109	.217	.326	.434	.543	.652	.760	.869	.977	.086
06	.108	.217	.325	.433	.541	.650	.758	.866	.975	.083
07	.108	.216	.324	.432	.539	.647	.755	.863	.971	.079
08	.107	.215	.322	.430	.537	.645	.752	.860	.967	.075
09	.107	.214	.322	.429	.536	.643	.750	.858	.965	.072
10	2.107	4.214	6.320	8.427	10.534	12.641	14.748	16.854	18.961	21.068
11	.106	.213	.319	.426	.532	.639	.745	.852	.958	.065
12	.106	.212	.318	.424	.530	.637	.743	.849	.955	.061
13	.106	.212	.317	.423	.529	.635	.741	.846	.952	.058
14	.105	.211	.316	.422	.527	.632	.738	.843	.949	.054
15	.105	.210	.315	.420	.525	.631	.736	.841	.946	.051
16	.105	.209	.314	.419	.523	.628	.733	.838	.942	.047
17	.104	.209	.313	.418	.522	.626	.731	.835	.940	.044
18	.104	.208	.312	.416	.520	.624	.728	.832	.936	.040
19	.104	.207	.311	.415	.518	.622	.726	.830	.933	.037
20	2.103	4.207	6.310	8.413	10.516	12.620	14.723	16.826	18.930	21.033
21	.103	.206	.309	.412	.515	.618	.721	.824	.927	.030
22	.103	.205	.308	.410	.513	.616	.718	.821	.923	.026
23	.102	.204	.307	.409	.511	.613	.715	.818	.920	.022
24	.102	.204	.306	.408	.509	.611	.713	.815	.917	.019
25	.101	.203	.304	.406	.507	.609	.710	.812	.913	.015
26	.101	.202	.304	.405	.506	.607	.708	.810	.911	.012
27	.101	.202	.302	.403	.504	.605	.706	.806	.907	.008
28	.100	.201	.301	.402	.502	.603	.703	.804	.904	.005
29	.100	.200	.300	.400	.500	.601	.701	.801	.901	.001
30	2.100	4.200	6.299	8.399	10.499	12.599	14.699	16.798	18.898	20.998
31	.099	.199	.298	.398	.497	.596	.696	.795	.895	.994
32	.099	.198	.297	.396	.495	.595	.694	.793	.892	.991
33	.099	.197	.296	.395	.493	.592	.691	.790	.888	.987
34	.098	.197	.295	.394	.492	.590	.689	.787	.886	.984
35	.098	.196	.294	.392	.490	.588	.686	.784	.882	.980
36	.098	.195	.293	.391	.488	.586	.684	.782	.879	.977
37	.097	.195	.292	.389	.486	.584	.681	.778	.876	.973
38	.097	.194	.291	.388	.484	.581	.678	.775	.872	.969
39	.097	.193	.290	.386	.483	.580	.676	.773	.869	.966
40	2.096	4.192	6.289	8.385	10.481	12.577	14.673	16.770	18.866	20.962
41	.096	.192	.288	.384	.479	.575	.671	.767	.863	.959
42	.095	.191	.286	.382	.477	.573	.668	.764	.859	.955
43	.095	.190	.286	.381	.476	.571	.666	.762	.857	.952
44	.095	.190	.284	.379	.474	.569	.664	.758	.853	.948
45	.094	.189	.283	.378	.472	.567	.661	.756	.850	.945
46	.094	.188	.282	.376	.470	.565	.659	.753	.847	.941
47	.094	.188	.281	.375	.469	.563	.657	.750	.844	.938
48	.093	.187	.280	.374	.467	.560	.654	.747	.841	.934
49	.093	.186	.279	.372	.465	.559	.652	.745	.838	.931
50	2.093	4.185	6.278	8.371	10.463	12.556	14.649	16.742	18.834	20.927
51	.092	.185	.277	.370	.462	.554	.647	.739	.832	.924
52	.092	.184	.276	.368	.460	.552	.644	.736	.828	.920
53	.092	.183	.275	.366	.458	.550	.641	.733	.824	.916
54	.091	.183	.274	.365	.456	.548	.639	.730	.822	.913
55	.091	.182	.273	.364	.454	.545	.636	.727	.818	.909
56	.091	.181	.272	.362	.453	.544	.634	.725	.815	.906
57	.090	.180	.271	.361	.451	.541	.631	.722	.812	.902
58	.090	.180	.269	.359	.449	.539	.629	.718	.808	.898
59	.089	.179	.268	.358	.447	.536	.626	.715	.805	.894
60	2.089	4.178	6.267	8.356	10.445	12.534	14.623	16.712	18.801	20.890

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.002
5	.004
6	.006
7	.007
8	.010
9	.012
10	.015

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.424
2	4.849
3	7.273
4	9.698
5	12.122
6	14.547
7	16.971
8	19.396
9	21.820
10	24.245

TABLE XI.—*Co-ordinates for projection of maps. Scale $\frac{1}{30000}$.*

[Derivation of table explained in section 5; use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
31 00	2.089	4.178	6.267	8.356	10.445	12.534	14.623	16.712	18.801	20.890
01	.089	.177	.266	.354	.443	.532	.620	.709	.797	.886
02	.088	.177	.265	.353	.441	.530	.618	.706	.795	.883
03	.088	.176	.264	.352	.439	.527	.615	.703	.791	.879
04	.087	.175	.262	.350	.437	.525	.612	.700	.787	.875
05	.087	.174	.262	.349	.436	.523	.610	.698	.785	.872
06	.087	.174	.260	.347	.434	.521	.608	.694	.781	.868
07	.086	.173	.259	.346	.432	.518	.605	.691	.778	.864
08	.086	.172	.258	.344	.430	.517	.603	.689	.775	.861
09	.086	.171	.257	.343	.428	.514	.600	.686	.771	.857
10	2.085	4.171	6.256	8.341	10.426	12.512	14.597	16.682	18.768	20.853
11	.085	.170	.255	.340	.425	.510	.595	.680	.765	.850
12	.085	.169	.254	.338	.423	.508	.592	.677	.761	.846
13	.084	.168	.253	.337	.421	.505	.589	.674	.758	.842
14	.084	.168	.252	.336	.419	.503	.587	.671	.755	.839
15	.083	.167	.250	.334	.417	.501	.584	.668	.751	.835
16	.083	.166	.249	.332	.415	.499	.582	.665	.748	.831
17	.083	.166	.248	.331	.414	.497	.580	.662	.745	.828
18	.082	.165	.247	.330	.412	.494	.577	.659	.742	.824
19	.082	.164	.246	.328	.410	.492	.574	.656	.738	.820
20	2.082	4.163	6.245	8.327	10.408	12.490	14.572	16.654	18.735	20.817
21	.081	.163	.244	.325	.406	.488	.569	.650	.732	.813
22	.081	.162	.243	.324	.404	.485	.566	.647	.728	.809
23	.081	.161	.242	.322	.403	.484	.564	.645	.725	.806
24	.080	.160	.241	.321	.401	.481	.561	.642	.722	.802
25	.080	.160	.239	.319	.399	.479	.559	.638	.718	.798
26	.079	.159	.238	.318	.397	.477	.556	.636	.715	.795
27	.079	.158	.237	.316	.395	.475	.554	.633	.712	.791
28	.079	.157	.236	.315	.393	.472	.551	.630	.708	.787
29	.078	.157	.235	.314	.392	.470	.549	.627	.706	.784
30	2.078	4.156	6.234	8.312	10.390	12.468	14.546	16.624	18.702	20.780
31	.078	.155	.233	.310	.388	.466	.543	.621	.698	.776
32	.077	.154	.232	.309	.386	.463	.540	.618	.695	.772
33	.077	.154	.231	.308	.384	.461	.538	.615	.692	.769
34	.076	.153	.229	.306	.382	.459	.535	.612	.688	.765
35	.076	.152	.228	.304	.380	.457	.533	.609	.685	.761
36	.076	.152	.227	.303	.379	.455	.530	.606	.682	.758
37	.075	.151	.226	.302	.377	.452	.528	.603	.679	.754
38	.075	.150	.225	.300	.375	.450	.525	.600	.675	.750
39	.075	.149	.224	.299	.373	.448	.523	.598	.672	.747
40	2.074	4.149	6.223	8.298	10.372	12.446	14.521	16.595	18.670	20.744
41	.074	.148	.222	.296	.369	.443	.517	.591	.665	.739
42	.074	.147	.221	.294	.368	.442	.515	.589	.662	.736
43	.073	.146	.220	.293	.366	.439	.512	.586	.659	.732
44	.073	.146	.218	.291	.364	.437	.510	.582	.655	.728
45	.072	.145	.217	.290	.362	.435	.507	.580	.652	.725
46	.072	.144	.216	.288	.360	.433	.505	.577	.649	.721
47	.072	.143	.215	.287	.358	.430	.502	.574	.645	.717
48	.071	.143	.214	.286	.357	.428	.500	.571	.643	.714
49	.071	.142	.213	.284	.355	.426	.497	.568	.639	.710
50	2.071	4.141	6.212	8.282	10.353	12.424	14.494	16.565	18.635	20.706
51	.070	.141	.211	.281	.351	.422	.492	.562	.633	.703
52	.070	.140	.210	.280	.349	.419	.489	.559	.629	.699
53	.069	.139	.208	.278	.347	.417	.486	.556	.625	.695
54	.069	.138	.208	.277	.346	.415	.484	.554	.623	.692
55	.069	.138	.206	.275	.344	.413	.482	.550	.619	.688
56	.068	.137	.205	.274	.342	.410	.479	.547	.616	.684
57	.068	.136	.204	.272	.340	.409	.477	.545	.613	.681
58	.068	.135	.203	.271	.338	.406	.474	.542	.609	.677
59	.067	.135	.202	.269	.336	.404	.471	.538	.606	.673
60	2.067	4.134	6.201	8.268	10.334	12.401	14.468	16.535	18.602	20.669

Longitude interval.	Ordinates of developed parallel.
′	Inches.
1	0.000
2	.001
3	.001
4	.002
5	.004
6	.006
7	.008
8	.010
9	.013
10	.016

Latitude interval.	Meridional distances.
′	Inches.
1	2.425
2	4.850
3	7.275
4	9.700
5	12.124
6	14.549
7	16.974
8	19.399
9	21.824
10	24.249

TABLE XI.—*Co-ordinates for projection of maps.—Scale* $\frac{1}{30000}$.

[Derivation of table explained in section (5) use of table explained on **page** 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
32 00	2.067	4.134	6.201	8.268	10.334	12.401	14.468	16.535	18.602	20.669
01	.066	.133	.199	.266	.332	.399	.465	.532	.598	.665
02	.066	.132	.198	.264	.330	.397	.463	.529	.595	.661
03	.066	.131	.197	.263	.328	.394	.460	.526	.591	.657
04	.065	.131	.196	.261	.326	.392	.457	.522	.588	.653
05	.065	.130	.195	.260	.325	.390	.455	.520	.585	.650
06	.065	.129	.194	.258	.323	.388	.452	.517	.581	.646
07	.064	.128	.193	.257	.321	.385	.449	.514	.578	.642
08	.064	.128	.191	.255	.319	.383	.447	.510	.574	.638
09	.063	.127	.190	.254	.317	.380	.444	.507	.571	.634
10	2.063	4.126	6.189	8.252	10.315	12.379	14.442	16.505	18.568	20.631
11	.063	.125	.188	.251	.313	.376	.439	.502	.564	.627
12	.062	.125	.187	.249	.311	.374	.436	.498	.561	.623
13	.062	.124	.186	.248	.309	.371	.433	.495	.557	.619
14	.061	.123	.184	.246	.307	.369	.430	.492	.553	.615
15	.061	.122	.184	.245	.306	.367	.428	.490	.551	.612
16	.061	.122	.182	.243	.304	.365	.426	.486	.547	.608
17	.060	.121	.181	.242	.302	.362	.423	.483	.544	.604
18	.060	.120	.180	.240	.300	.360	.420	.480	.540	.600
19	.060	.119	.179	.238	.298	.358	.417	.477	.536	.596
20	2.059	4.119	6.178	8.237	10.296	12.356	14.415	16.474	18.534	20.593
21	.059	.118	.177	.236	.294	.353	.412	.471	.530	.589
22	.058	.117	.175	.234	.292	.351	.409	.468	.526	.585
23	.058	.116	.174	.232	.290	.349	.407	.465	.523	.581
24	.058	.115	.173	.231	.288	.346	.404	.462	.519	.577
25	.057	.115	.172	.230	.287	.344	.402	.459	.517	.574
26	.057	.114	.171	.228	.285	.342	.399	.456	.513	.570
27	.057	.113	.170	.226	.283	.340	.396	.453	.509	.566
28	.056	.112	.169	.225	.281	.337	.393	.450	.506	.562
29	.056	.112	.167	.223	.279	.335	.391	.446	.502	.558
30	2.055	4.111	6.166	8.222	10.277	12.333	14.388	16.444	18.499	20.555
31	.055	.110	.165	.220	.275	.331	.386	.441	.496	.551
32	.055	.109	.164	.219	.273	.328	.383	.438	.492	.547
33	.054	.109	.163	.217	.271	.326	.380	.434	.489	.543
34	.054	.108	.162	.216	.269	.323	.377	.431	.485	.539
35	.054	.107	.161	.214	.268	.322	.375	.429	.482	.536
36	.053	.106	.160	.213	.266	.319	.372	.426	.479	.532
37	.053	.106	.158	.211	.264	.317	.370	.422	.475	.528
38	.052	.105	.157	.210	.262	.314	.367	.419	.472	.524
39	.052	.104	.156	.208	.260	.312	.364	.416	.468	.520
40	2.052	4.103	6.155	8.207	10.258	12.310	14.362	16.414	18.465	20.517
41	.051	.103	.154	.205	.256	.308	.359	.410	.462	.513
42	.051	.102	.153	.204	.254	.305	.356	.407	.458	.509
43	.050	.101	.151	.202	.252	.303	.353	.404	.454	.505
44	.050	.100	.150	.200	.250	.300	.351	.401	.451	.501
45	.050	.100	.149	.199	.249	.299	.349	.398	.448	.498
46	.049	.099	.148	.198	.247	.296	.346	.395	.445	.494
47	.049	.098	.147	.196	.245	.294	.343	.392	.441	.490
48	.049	.097	.146	.194	.243	.292	.340	.389	.437	.486
49	.048	.096	.145	.193	.241	.289	.337	.386	.434	.482
50	2.048	4.096	6.144	8.192	10.239	12.287	14.335	16.383	18.431	20.479
51	.047	.095	.142	.190	.237	.285	.332	.380	.427	.475
52	.047	.094	.141	.188	.235	.283	.330	.377	.424	.471
53	.047	.093	.140	.187	.233	.280	.327	.374	.420	.467
54	.046	.093	.139	.185	.231	.278	.324	.370	.417	.463
55	.046	.092	.138	.184	.230	.276	.322	.368	.414	.460
56	.046	.091	.137	.182	.228	.274	.319	.365	.410	.456
57	.045	.090	.136	.181	.226	.271	.316	.362	.407	.452
58	.045	.090	.134	.179	.224	.269	.314	.358	.403	.448
59	.044	.089	.133	.178	.222	.266	.311	.355	.400	.444
60	2.044	4.088	6.132	8.176	10.220	12.265	14.309	16.353	18.397	20.441

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.003
5	.004
6	.006
7	.008
8	.010
9	.013
10	.016

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.425
2	4.851
3	7.276
4	9.702
5	12.127
6	14.552
7	16.978
8	19.403
9	21.829
10	24.254

TABLE XI.—*Co-ordinates for projection of maps.* *Scale* $\frac{1}{30000}$.

[Derivation of table explained in section 5; use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
33 00	2.044	4.088	6.132	8.176	10.220	12.265	14.309	16.353	18.397	20.441
1	.044	.087	.131	.175	.218	.262	.306	.350	.393	.437
2	.043	.087	.130	.173	.216	.260	.303	.346	.390	.433
3	.043	.086	.129	.172	.214	.257	.300	.343	.386	.429
4	.042	.085	.127	.170	.212	.255	.297	.340	.382	.425
5	.042	.084	.126	.168	.210	.253	.295	.337	.379	.421
6	.042	.083	.125	.167	.208	.250	.292	.334	.375	.417
7	.041	.083	.124	.165	.206	.248	.289	.330	.372	.413
8	.041	.082	.123	.164	.204	.245	.286	.327	.368	.409
9	.040	.081	.121	.162	.202	.243	.283	.324	.364	.405
10	2.040	4.080	6.121	8.161	10.201	12.241	14.281	16.322	18.362	20.402
11	.040	.080	.119	.159	.199	.239	.279	.318	.358	.398
12	.039	.079	.118	.158	.197	.236	.276	.315	.355	.394
13	.039	.078	.117	.156	.195	.234	.273	.312	.351	.390
14	.039	.077	.116	.154	.193	.232	.270	.309	.347	.386
15	.038	.076	.115	.153	.191	.229	.267	.306	.344	.382
16	.038	.076	.113	.151	.189	.227	.265	.302	.340	.378
17	.037	.075	.112	.150	.187	.224	.262	.299	.337	.374
18	.037	.074	.111	.148	.185	.222	.259	.296	.333	.370
19	.037	.073	.110	.146	.183	.220	.256	.293	.329	.366
20	2.036	4.073	6.109	8.145	10.181	12.218	14.254	16.290	18.327	20.363
21	.036	.072	.108	.144	.179	.215	.251	.287	.323	.359
22	.035	.071	.106	.142	.177	.213	.248	.284	.319	.355
23	.035	.070	.105	.140	.175	.211	.246	.281	.316	.351
24	.035	.069	.104	.139	.173	.208	.243	.278	.312	.347
25	.034	.069	.103	.137	.171	.206	.240	.274	.309	.343
26	.034	.068	.102	.136	.169	.203	.237	.271	.305	.339
27	.033	.067	.100	.134	.167	.201	.234	.268	.301	.335
28	.033	.066	.099	.132	.165	.199	.232	.265	.298	.331
29	.033	.065	.098	.131	.163	.196	.229	.262	.294	.327
30	2.032	4.065	6.097	8.130	10.162	12.194	14.227	16.259	18.292	20.324
31	.032	.064	.096	.128	.160	.192	.224	.256	.288	.320
32	.032	.063	.095	.126	.158	.190	.221	.253	.284	.316
33	.031	.062	.094	.125	.156	.187	.218	.250	.281	.312
34	.031	.062	.092	.123	.154	.185	.216	.246	.277	.308
35	.030	.061	.091	.122	.152	.182	.213	.243	.274	.304
36	.030	.060	.090	.120	.150	.180	.210	.240	.270	.300
37	.030	.059	.089	.118	.148	.178	.207	.237	.266	.296
38	.029	.058	.088	.117	.146	.175	.204	.234	.263	.292
39	.029	.058	.086	.115	.144	.173	.202	.230	.259	.288
40	2.028	4.057	6.085	8.114	10.142	12.171	14.199	16.228	18.256	20.285
41	.028	.056	.084	.112	.140	.169	.197	.225	.253	.281
42	.028	.055	.083	.111	.139	.166	.194	.222	.249	.277
43	.027	.055	.082	.109	.136	.164	.191	.218	.246	.273
44	.027	.054	.081	.108	.134	.161	.188	.215	.242	.269
45	.026	.053	.079	.106	.132	.159	.185	.212	.238	.265
46	.026	.052	.078	.104	.130	.157	.183	.209	.235	.261
47	.026	.051	.077	.103	.128	.154	.180	.206	.231	.257
48	.025	.051	.076	.101	.126	.152	.177	.202	.228	.253
49	.025	.050	.075	.100	.124	.149	.174	.199	.224	.249
50	2.025	4.049	6.074	8.098	10.123	12.148	14.172	16.197	18.221	20.246
51	.024	.048	.073	.097	.121	.145	.169	.194	.218	.242
52	.024	.048	.071	.095	.119	.143	.167	.190	.214	.238
53	.023	.047	.070	.094	.117	.140	.164	.187	.211	.234
54	.023	.046	.069	.092	.115	.138	.161	.184	.207	.230
55	.023	.045	.068	.090	.113	.136	.158	.181	.203	.226
56	.022	.044	.067	.089	.111	.133	.155	.178	.200	.222
57	.022	.044	.065	.087	.109	.131	.153	.174	.196	.218
58	.021	.043	.064	.086	.107	.128	.150	.171	.193	.214
59	.021	.042	.063	.084	.105	.126	.147	.168	.189	.210
60	2.021	4.041	6.062	8.083	10.103	12.124	14.145	16.166	18.186	20.207

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.003
5	.004
6	.006
7	.008
8	.010
9	.013
10	.016

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.426
2	4.852
3	7.277
4	9.703
5	12.129
6	14.555
7	16.981
8	19.406
9	21.832
10	24.258

TABLE XI.—*Co-ordinates for projection of maps. Scale* $\frac{1}{30000}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
34 00	2.021	4.041	6.062	8.083	10.103	12.124	14.145	16.166	18.186	20.207
01	.020	.041	.061	.081	.101	.122	.142	.162	.183	.203
02	.020	.040	.060	.080	.099	.119	.139	.159	.179	.199
03	.019	.039	.058	.078	.097	.117	.136	.156	.175	.195
04	.019	.038	.057	.076	.095	.115	.134	.153	.172	.191
05	.019	.037	.056	.075	.093	.112	.131	.150	.168	.187
06	.018	.037	.055	.073	.091	.110	.128	.146	.165	.183
07	.018	.036	.054	.072	.089	.107	.125	.143	.161	.179
08	.017	.035	.052	.070	.087	.105	.122	.140	.157	.175
09	.017	.034	.051	.068	.085	.103	.120	.137	.154	.171
10	2.017	4.033	6.050	8.067	10.083	12.100	14.117	16.134	18.150	20.167
11	.016	.033	.049	.065	.081	.098	.114	.130	.147	.163
12	.016	.032	.048	.064	.079	.095	.111	.127	.143	.159
13	.015	.031	.046	.062	.077	.093	.108	.124	.139	.155
14	.015	.030	.045	.060	.075	.091	.106	.121	.136	.151
15	.015	.029	.044	.059	.073	.088	.103	.118	.132	.147
16	.014	.029	.043	.057	.071	.086	.100	.114	.129	.143
17	.014	.028	.042	.056	.069	.083	.097	.111	.125	.139
18	.013	.027	.040	.054	.067	.081	.094	.108	.121	.135
19	.013	.026	.039	.052	.065	.079	.092	.105	.118	.131
20	2.013	4.025	6.038	8.051	10.063	12.076	14.089	16.102	18.114	20.127
21	.012	.025	.037	.049	.061	.074	.086	.098	.111	.123
22	.012	.024	.036	.048	.059	.071	.083	.095	.107	.119
23	.011	.023	.034	.046	.057	.069	.080	.092	.103	.115
24	.011	.022	.033	.044	.055	.067	.078	.089	.100	.111
25	.011	.021	.032	.043	.053	.064	.075	.086	.096	.107
26	.010	.021	.031	.041	.051	.062	.072	.082	.093	.103
27	.010	.020	.030	.040	.049	.059	.069	.079	.089	.099
28	.009	.019	.028	.038	.047	.057	.066	.076	.085	.095
29	.009	.018	.027	.036	.045	.055	.064	.073	.082	.091
30	2.009	4.017	6.026	8.035	10.043	12.052	14.061	16.070	18.078	20.087
31	.008	.017	.025	.033	.041	.050	.058	.066	.075	.083
32	.008	.016	.024	.032	.039	.047	.055	.063	.071	.079
33	.007	.015	.022	.030	.037	.045	.052	.060	.067	.075
34	.007	.014	.021	.028	.035	.043	.050	.057	.064	.071
35	.007	.013	.020	.027	.033	.040	.047	.054	.060	.067
36	.006	.013	.019	.025	.031	.038	.044	.050	.057	.063
37	.006	.012	.018	.024	.029	.035	.041	.047	.053	.059
38	.005	.011	.016	.022	.027	.033	.038	.044	.049	.055
39	.005	.010	.015	.020	.025	.031	.036	.041	.046	.051
40	2.005	4.009	6.014	8.019	10.023	12.028	14.033	16.038	18.042	20.047
41	.004	.009	.013	.017	.021	.026	.030	.034	.039	.043
42	.004	.008	.012	.016	.019	.023	.027	.031	.035	.039
43	.003	.007	.010	.014	.017	.021	.024	.028	.031	.035
44	.003	.006	.009	.012	.015	.019	.022	.025	.028	.031
45	.003	.005	.008	.011	.013	.016	.019	.022	.024	.027
46	.002	.005	.007	.009	.011	.014	.016	.018	.021	.023
47	.002	.004	.006	.008	.009	.011	.013	.015	.017	.019
48	.001	.003	.004	.006	.007	.009	.010	.012	.013	.015
49	.001	.002	.003	.004	.005	.007	.008	.009	.010	.011
50	2.001	4.001	6.002	8.003	10.003	12.004	14.005	16.006	18.006	20.007
51	.000	.001	.001	.001	.001	.002	.002	.002	.003	.003
52	.000	.000	.000	.000	9.999	11.999	13.999	15.999	17.999	19.999
53	1.999	3.999	5.998	7.998	.997	.997	.996	.996	.995	.995
54	.999	.998	.997	.996	.995	.995	.994	.993	.992	.991
55	.999	.997	.996	.995	.993	.992	.991	.990	.988	.987
56	.998	.997	.995	.993	.991	.990	.988	.986	.985	.983
57	.998	.996	.994	.992	.989	.987	.985	.983	.981	.979
58	.997	.995	.992	.990	.987	.985	.982	.980	.977	.975
59	.997	.994	.991	.988	.985	.983	.980	.977	.974	.971
60	1.997	3.993	5.990	7.987	9.983	11.980	13.977	15.974	17.970	19.967

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.003
5	.004
6	.006
7	.008
8	.010
9	.013
10	.016

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.426
2	4.852
3	7.279
4	9.705
5	12.131
6	14.557
7	16.983
8	19.410
9	21.836
10	24.262

Table XI.—*Co-ordinates for projection of maps. Scale* $\frac{1}{30000}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
35 00	1.997	3.993	5.990	7.987	9.983	11.980	13.977	15.974	17.970	19.967
01	.996	.993	.989	.985	.981	.978	.974	.970	.967	.963
02	.996	.992	.988	.984	.979	.975	.971	.967	.963	.959
03	.995	.991	.986	.982	.977	.973	.968	.964	.959	.955
04	.995	.990	.985	.980	.975	.971	.966	.961	.956	.951
05	.995	.989	.984	.979	.973	.968	.963	.958	.952	.947
06	.994	.989	.983	.977	.971	.966	.960	.954	.949	.943
07	.994	.988	.981	.975	.969	.963	.957	.950	.944	.938
08	.993	.987	.980	.974	.967	.960	.954	.947	.941	.934
09	.993	.986	.979	.972	.965	.958	.951	.944	.937	.930
10	1.993	3.985	5.978	7.970	9.963	11.956	13.948	15.941	17.933	19.926
11	.992	.984	.977	.969	.961	.953	.945	.938	.930	.922
12	.992	.984	.975	.967	.959	.951	.943	.934	.926	.918
13	.991	.983	.974	.966	.957	.948	.940	.931	.923	.914
14	.991	.982	.973	.964	.955	.946	.937	.928	.919	.910
15	.991	.981	.972	.962	.953	.944	.934	.925	.915	.906
16	.990	.980	.971	.961	.951	.941	.931	.922	.912	.902
17	.990	.980	.969	.959	.949	.939	.929	.918	.908	.898
18	.989	.979	.968	.958	.947	.936	.926	.915	.905	.894
19	.989	.978	.967	.956	.944	.933	.922	.911	.900	.889
20	1.988	3.977	5.965	7.954	9.942	11.931	13.919	15.908	17.896	19.885
21	.988	.976	.964	.952	.940	.929	.917	.905	.893	.881
22	.988	.975	.963	.951	.938	.926	.914	.902	.889	.877
23	.987	.975	.962	.949	.936	.924	.911	.898	.886	.873
24	.987	.974	.961	.948	.934	.921	.908	.895	.882	.869
25	.986	.973	.959	.946	.932	.919	.905	.892	.878	.865
26	.986	.972	.958	.944	.930	.917	.903	.889	.875	.861
27	.986	.971	.957	.943	.928	.914	.900	.886	.871	.857
28	.985	.971	.956	.941	.926	.912	.897	.882	.868	.853
29	.985	.970	.955	.940	.924	.909	.894	.879	.864	.849
30	1.984	3.969	5.953	7.938	9.922	11.907	13.891	15.876	17.860	19.845
31	.984	.968	.952	.936	.920	.904	.888	.872	.856	.840
32	.984	.967	.951	.934	.918	.902	.885	.869	.852	.836
33	.983	.966	.950	.933	.916	.899	.882	.866	.849	.832
34	.983	.966	.948	.931	.914	.897	.880	.862	.845	.828
35	.982	.965	.947	.930	.912	.894	.877	.859	.842	.824
36	.982	.964	.946	.928	.910	.892	.874	.856	.838	.820
37	.982	.963	.945	.926	.908	.890	.871	.853	.834	.816
38	.981	.962	.944	.925	.906	.887	.868	.850	.831	.812
39	.981	.962	.942	.923	.904	.885	.866	.846	.827	.808
40	1.980	3.961	5.941	7.922	9.902	11.882	13.863	15.843	17.824	19.804
41	.980	.960	.940	.920	.900	.880	.860	.840	.820	.800
42	.980	.959	.939	.918	.898	.878	.857	.837	.816	.796
43	.979	.958	.937	.916	.895	.875	.854	.833	.812	.791
44	.979	.957	.936	.915	.893	.872	.851	.830	.808	.787
45	.978	.957	.935	.913	.891	.870	.848	.826	.805	.783
46	.978	.956	.934	.912	.889	.867	.845	.823	.801	.779
47	.977	.955	.932	.910	.887	.865	.842	.820	.797	.775
48	.977	.954	.931	.908	.885	.863	.840	.817	.794	.771
49	.977	.953	.930	.907	.883	.860	.837	.814	.790	.767
50	1.976	3.953	5.929	7.905	9.881	11.858	13.834	15.810	17.787	19.763
51	.976	.952	.928	.904	.879	.855	.831	.807	.783	.759
52	.975	.951	.926	.902	.877	.853	.828	.804	.779	.755
53	.975	.950	.925	.900	.875	.851	.826	.801	.776	.751
54	.975	.949	.924	.899	.873	.848	.823	.798	.772	.747
55	.974	.948	.923	.897	.871	.845	.819	.794	.768	.742
56	.974	.948	.921	.895	.869	.843	.817	.790	.764	.738
57	.973	.947	.920	.894	.867	.840	.814	.787	.761	.734
58	.973	.946	.919	.892	.865	.838	.811	.784	.757	.730
59	.973	.945	.918	.890	.863	.836	.808	.781	.753	.726
60	1.972	3.944	5.917	7.889	9.861	11.833	13.805	15.778	17.750	19.722

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.001
4	.003
5	.004
6	.006
7	.008
8	.011
9	.013
10	.017

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.427
2	4.853
3	7.280
4	9.706
5	12.133
6	14.560
7	16.986
8	19.413
9	21.839
10	24.266

TABLE XI.—*Co-ordinates for projection of maps. Scale $\frac{1}{30000}$.*

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
36 00	1.972	3.944	5.917	7.889	9.861	11.833	13.805	15.778	17.750	19.722
01	.972	.944	.915	.887	.859	.831	.803	.774	.746	.718
02	.971	.943	.914	.886	.857	.828	.800	.771	.743	.714
03	.971	.942	.913	.884	.855	.826	.797	.768	.739	.710
04	.971	.941	.912	.882	.853	.824	.794	.765	.735	.706
05	.970	.940	.910	.880	.850	.821	.791	.761	.731	.701
06	.970	.939	.909	.879	.848	.818	.788	.758	.727	.697
07	.969	.939	.908	.877	.846	.816	.785	.754	.724	.693
08	.969	.938	.907	.876	.844	.813	.782	.751	.720	.689
09	.968	.937	.905	.874	.842	.811	.779	.748	.716	.685
10	1.968	3.936	5.904	7.872	9.840	11.808	13.776	15.744	17.712	19.680
11	.968	.935	.903	.870	.838	.806	.773	.741	.708	.676
12	.967	.934	.902	.869	.836	.803	.770	.738	.705	.672
13	.967	.934	.900	.867	.834	.801	.768	.734	.701	.668
14	.966	.933	.899	.866	.832	.798	.765	.731	.698	.664
15	.966	.932	.898	.864	.829	.795	.761	.727	.693	.659
16	.965	.931	.896	.862	.827	.793	.758	.724	.689	.655
17	.965	.930	.895	.860	.825	.791	.756	.721	.686	.651
18	.965	.929	.894	.859	.823	.788	.753	.718	.682	.647
19	.964	.929	.893	.857	.821	.786	.750	.714	.679	.643
20	1.964	3.928	5.891	7.855	9.819	11.783	13.747	15.710	17.674	19.638
21	.963	.927	.890	.854	.817	.780	.744	.707	.671	.634
22	.963	.926	.889	.852	.815	.778	.741	.704	.667	.630
23	.963	.925	.888	.850	.813	.776	.738	.701	.663	.626
24	.962	.924	.887	.849	.811	.773	.735	.698	.660	.622
25	.962	.923	.885	.847	.808	.770	.732	.694	.655	.617
26	.961	.923	.884	.845	.806	.768	.729	.690	.652	.613
27	.961	.922	.883	.844	.804	.765	.726	.687	.648	.609
28	.960	.921	.881	.842	.802	.763	.723	.684	.644	.605
29	.960	.920	.880	.840	.800	.761	.721	.681	.641	.601
30	1.960	3.919	5.879	7.838	9.798	11.758	13.717	15.677	17.636	19.596
31	.959	.918	.878	.837	.796	.755	.714	.674	.633	.592
32	.959	.918	.876	.835	.794	.753	.712	.670	.629	.588
33	.958	.917	.875	.834	.792	.750	.709	.667	.626	.584
34	.958	.916	.874	.832	.790	.748	.706	.664	.622	.580
35	.957	.915	.872	.830	.787	.745	.702	.660	.617	.575
36	.957	.914	.871	.828	.785	.743	.700	.657	.614	.571
37	.957	.913	.870	.827	.783	.740	.697	.654	.610	.567
38	.956	.913	.869	.825	.781	.738	.694	.650	.607	.563
39	.956	.912	.868	.824	.779	.735	.691	.647	.603	.559
40	1.955	3.911	5.866	7.822	9.777	11.732	13.688	15.643	17.599	19.554
41	.955	.910	.865	.820	.775	.730	.685	.640	.595	.550
42	.955	.909	.864	.818	.773	.728	.682	.637	.591	.546
43	.954	.908	.863	.817	.771	.725	.679	.634	.588	.542
44	.954	.908	.861	.815	.769	.723	.677	.630	.584	.538
45	.953	.907	.860	.813	.766	.720	.673	.626	.580	.533
46	.953	.906	.859	.812	.764	.717	.670	.623	.576	.529
47	.952	.905	.857	.810	.762	.715	.667	.620	.572	.525
48	.952	.904	.856	.808	.760	.713	.665	.617	.569	.521
49	.952	.903	.855	.807	.758	.710	.662	.614	.565	.517
50	1.951	3.902	5.854	7.805	9.756	11.707	13.658	15.610	17.561	19.512
51	.951	.902	.852	.803	.754	.705	.656	.606	.557	.508
52	.950	.901	.851	.802	.752	.702	.653	.603	.554	.504
53	.950	.900	.850	.800	.750	.700	.650	.600	.550	.500
54	.950	.899	.849	.798	.748	.698	.647	.597	.546	.496
55	.949	.898	.847	.796	.745	.695	.644	.593	.542	.491
56	.949	.897	.846	.795	.743	.692	.641	.590	.538	.487
57	.948	.897	.845	.793	.741	.690	.638	.586	.535	.483
58	.948	.896	.844	.792	.739	.687	.635	.583	.531	.479
59	.947	.895	.842	.790	.737	.685	.632	.580	.527	.475
60	1.947	3.894	5.841	7.788	9.735	11.682	13.629	15.576	17.523	19.470

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.002
4	.003
5	.004
6	.006
7	.008
8	.011
9	.014
10	.017

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.427
2	4.854
3	7.281
4	9.708
5	12.134
6	14.561
7	16.988
8	19.415
9	21.842
10	24.269

TABLE XI.—*Co-ordinates for projection of maps. Scale* $\frac{1}{80000}$.

[Derivation of table explained in section (5); use of table explained on page 82.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
37 00	1.947	3.894	5.841	7.788	9.735	11.682	13.629	15.576	17.523	19.470
01	.947	.893	.840	.786	.733	.680	.626	.573	.519	.466
02	.946	.892	.838	.784	.730	.677	.623	.569	.515	.461
03	.946	.891	.837	.783	.728	.674	.620	.566	.511	.457
04	.945	.891	.836	.781	.726	.672	.617	.562	.508	.453
05	.945	.890	.834	.779	.724	.669	.614	.558	.503	.448
06	.944	.889	.833	.778	.722	.666	.611	.555	.500	.444
07	.944	.888	.832	.776	.720	.664	.608	.552	.496	.440
08	.943	.887	.830	.774	.717	.661	.604	.548	.491	.435
09	.943	.886	.829	.772	.715	.659	.602	.545	.488	.431
10	1.943	3.885	5.828	7.771	9.713	11.656	13.599	15.542	17.484	19.427
11	.942	.884	.827	.769	.711	.653	.595	.538	.480	.422
12	.942	.884	.825	.767	.709	.651	.593	.534	.476	.418
13	.941	.883	.824	.766	.707	.648	.590	.531	.473	.414
14	.941	.882	.823	.764	.704	.645	.586	.527	.468	.409
15	.940	.881	.821	.762	.702	.643	.583	.524	.464	.405
16	.940	.880	.820	.760	.700	.641	.581	.521	.461	.401
17	.940	.879	.819	.758	.698	.638	.577	.517	.456	.396
18	.939	.878	.818	.757	.696	.635	.574	.514	.453	.392
19	.939	.878	.816	.755	.694	.633	.572	.510	.449	.388
20	1.938	3.877	5.815	7.753	9.691	11.630	13.568	15.506	17.445	19.383
21	.938	.876	.814	.752	.689	.627	.565	.503	.441	.379
22	.937	.875	.812	.750	.687	.625	.562	.500	.437	.375
23	.937	.874	.811	.748	.685	.622	.559	.496	.433	.370
24	.937	.873	.810	.746	.683	.620	.556	.493	.429	.366
25	.936	.872	.809	.745	.681	.617	.553	.490	.426	.362
26	.936	.871	.807	.743	.678	.614	.550	.486	.421	.357
27	.935	.871	.806	.741	.676	.612	.547	.482	.418	.353
28	.935	.870	.805	.740	.674	.609	.544	.479	.414	.349
29	.934	.869	.803	.738	.672	.606	.541	.475	.410	.344
30	1.934	3.868	5.802	7.736	9.670	11.604	13.538	15.472	17.406	19.340
31	.934	.867	.801	.735	.668	.602	.536	.470	.403	.337
32	.933	.866	.800	.733	.666	.599	.532	.466	.399	.332
33	.933	.866	.798	.731	.664	.597	.530	.462	.395	.328
34	.932	.865	.797	.730	.662	.594	.527	.459	.392	.324
35	.932	.864	.796	.728	.659	.591	.523	.455	.387	.319
36	.931	.863	.794	.726	.657	.589	.520	.452	.383	.315
37	.931	.862	.793	.724	.655	.587	.518	.449	.380	.311
38	.931	.861	.792	.722	.653	.584	.514	.445	.375	.306
39	.930	.860	.791	.721	.651	.581	.511	.442	.372	.302
40	1.930	3.860	5.789	7.719	9.649	11.579	13.509	15.438	17.368	19.298
41	.929	.859	.788	.717	.646	.576	.505	.434	.364	.293
42	.929	.858	.787	.716	.644	.573	.502	.431	.360	.289
43	.928	.857	.785	.714	.642	.571	.499	.428	.356	.285
44	.928	.856	.784	.712	.640	.568	.496	.424	.352	.280
45	.928	.855	.783	.710	.638	.566	.493	.421	.348	.276
46	.927	.854	.782	.709	.636	.563	.490	.418	.345	.272
47	.927	.853	.780	.707	.633	.560	.487	.414	.340	.267
48	.926	.853	.779	.705	.631	.558	.484	.410	.337	.263
49	.926	.852	.778	.704	.629	.555	.481	.407	.333	.259
50	1.925	3.851	5.776	7.702	9.627	11.552	13.478	15.403	17.329	19.254
51	.925	.850	.775	.700	.625	.550	.475	.400	.325	.250
52	.925	.849	.774	.698	.623	.548	.472	.397	.321	.246
53	.924	.848	.772	.696	.620	.545	.469	.393	.317	.241
54	.924	.847	.771	.695	.618	.542	.466	.390	.313	.237
55	.923	.847	.770	.693	.616	.540	.463	.386	.310	.233
56	.923	.846	.768	.691	.614	.537	.460	.382	.305	.228
57	.922	.845	.767	.690	.612	.534	.457	.379	.302	.224
58	.922	.844	.766	.688	.610	.532	.454	.376	.298	.220
59	.921	.843	.764	.686	.607	.529	.450	.372	.293	.215
60	1.921	3.842	5.763	7.684	9.605	11.527	13.448	15.369	17.290	19.211

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.002
4	.003
5	.004
6	.006
7	.008
8	.011
9	.014
10	.017

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.427
2	4.855
3	7.282
4	9.709
5	12.136
6	14.564
7	16.991
8	19.418
9	21.846
10	24.273

TABLE XI.—*Co-ordinates for projection of maps.* *Scale* $\frac{1}{30000}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
38 00	1.921	3.842	5.763	7.684	9.605	11.527	13.448	15.369	17.290	19.211
01	.921	.841	.762	.683	.603	.524	.445	.366	.286	.207
02	.920	.840	.761	.681	.601	.521	.441	.362	.282	.202
03	.920	.840	.759	.679	.599	.519	.439	.358	.278	.198
04	.919	.839	.758	.678	.597	.516	.436	.355	.275	.194
05	.919	.838	.757	.676	.594	.513	.432	.351	.270	.189
06	.918	.837	.755	.674	.592	.511	.429	.348	.266	.185
07	.918	.836	.754	.672	.590	.509	.427	.345	.263	.181
08	.918	.835	.753	.670	.588	.506	.423	.341	.258	.176
09	.917	.834	.752	.669	.586	.503	.420	.338	.255	.172
10	1.917	3.834	5.750	7.667	9.584	11.501	13.418	15.334	17.251	19.168
11	.916	.833	.749	.665	.581	.498	.414	.330	.247	.163
12	.916	.832	.748	.664	.579	.495	.411	.327	.243	.159
13	.915	.831	.746	.662	.577	.493	.408	.324	.239	.155
14	.915	.830	.745	.660	.575	.490	.405	.320	.235	.150
15	.915	.829	.744	.658	.573	.488	.402	.317	.231	.146
16	.914	.828	.743	.657	.571	.485	.399	.314	.228	.142
17	.914	.827	.741	.655	.568	.482	.396	.310	.223	.137
18	.913	.827	.740	.653	.566	.480	.393	.306	.220	.133
19	.913	.826	.739	.652	.564	.477	.390	.303	.216	.129
20	1.912	3.825	5.737	7.650	9.562	11.474	13.387	15.299	17.212	19.124
21	.912	.824	.736	.648	.559	.471	.383	.295	.207	.119
22	.911	.823	.734	.646	.557	.469	.380	.292	.203	.115
23	.911	.822	.733	.644	.555	.466	.377	.288	.199	.110
24	.911	.821	.732	.642	.553	.464	.374	.285	.195	.106
25	.910	.820	.731	.641	.551	.461	.371	.282	.192	.102
26	.910	.819	.729	.639	.548	.458	.368	.278	.187	.097
27	.909	.819	.728	.637	.546	.456	.365	.274	.184	.093
28	.909	.818	.727	.636	.544	.453	.362	.271	.180	.089
29	.908	.817	.725	.634	.542	.450	.359	.267	.176	.084
30	1.908	3.816	5.724	7.632	9.540	11.448	13.356	15.264	17.172	19.080
31	.908	.815	.723	.630	.538	.446	.353	.261	.168	.076
32	.907	.814	.721	.628	.535	.443	.350	.257	.164	.071
33	.907	.813	.720	.627	.533	.440	.347	.254	.160	.067
34	.906	.813	.719	.625	.531	.438	.344	.250	.157	.063
35	.906	.812	.717	.623	.529	.435	.341	.246	.152	.058
36	.905	.811	.716	.622	.527	.432	.338	.243	.149	.054
37	.905	.810	.715	.620	.525	.430	.335	.240	.145	.050
38	.904	.809	.713	.618	.522	.427	.331	.236	.140	.045
39	.904	.808	.712	.616	.520	.425	.329	.233	.137	.041
40	1.904	3.807	5.711	7.615	9.518	11.422	13.326	15.230	17.133	19.037
41	.903	.806	.710	.613	.516	.419	.322	.226	.129	.032
42	.903	.805	.708	.611	.513	.416	.319	.222	.124	.027
43	.902	.805	.707	.609	.511	.414	.316	.218	.121	.023
44	.902	.804	.705	.607	.509	.411	.313	.214	.116	.018
45	.901	.803	.704	.606	.507	.408	.310	.211	.113	.014
46	.901	.802	.703	.604	.505	.406	.307	.208	.109	.010
47	.900	.801	.701	.602	.502	.403	.303	.204	.104	.005
48	.900	.800	.700	.600	.500	.401	.301	.201	.101	.001
49	.900	.799	.699	.599	.498	.398	.298	.198	.097	18.997
50	1.899	3.798	5.698	7.597	9.496	11.395	13.294	15.194	17.093	18.992
51	.899	.798	.696	.595	.494	.393	.292	.190	.089	.988
52	.898	.797	.695	.594	.492	.390	.289	.187	.086	.984
53	.898	.796	.694	.592	.489	.387	.285	.183	.081	.979
54	.897	.795	.692	.590	.487	.385	.282	.180	.077	.975
55	.897	.794	.691	.588	.485	.383	.280	.177	.074	.971
56	.897	.793	.690	.586	.483	.380	.276	.173	.069	.966
57	.896	.792	.689	.585	.481	.377	.273	.170	.066	.962
58	.896	.792	.687	.583	.479	.375	.271	.166	.062	.958
59	.895	.791	.686	.581	.476	.372	.267	.162	.058	.953
60	1.895	3.790	5.684	7.579	9.474	11.369	13.264	15.158	17.053	18.948

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.002
4	.003
5	.004
6	.006
7	.008
8	.011
9	.014
10	.017

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.428
2	4.855
3	7.283
4	9.711
5	12.138
6	14.566
7	16.994
8	19.422
9	21.849
10	24.277

TABLE XI.—*Co-ordinates for projection of maps. Scale* $\frac{1}{30000}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
39 00	1.895	3.790	5.684	7.579	9.474	11.369	13.264	15.158	17.053	18.948
01	.894	.789	.683	.578	.472	.366	.261	.155	.050	.944
02	.894	.788	.682	.576	.469	.363	.257	.151	.045	.939
03	.893	.787	.680	.574	.467	.361	.254	.148	.041	.935
04	.893	.786	.679	.572	.465	.358	.251	.144	.037	.930
05	.893	.785	.678	.570	.463	.356	.248	.141	.033	.926
06	.892	.784	.676	.568	.460	.353	.245	.137	.029	.921
07	.892	.783	.675	.567	.458	.350	.242	.134	.025	.917
08	.891	.782	.674	.565	.456	.347	.238	.130	.021	.912
09	.891	.782	.672	.563	.454	.345	.236	.126	.017	.908
10	1.890	3.781	5.671	7.561	9.451	11.342	13.232	15.122	17.013	18.903
11	.890	.780	.670	.560	.449	.339	.229	.119	.009	.899
12	.889	.779	.668	.558	.447	.336	.226	.115	.005	.894
13	.889	.778	.667	.556	.445	.334	.223	.112	.001	.890
14	.888	.777	.665	.554	.442	.331	.219	.108	16.996	.885
15	.888	.776	.664	.552	.440	.329	.217	.105	.993	.881
16	.888	.775	.663	.550	.438	.326	.213	.101	.988	.876
17	.887	.774	.662	.549	.436	.323	.210	.098	.985	.872
18	.887	.773	.660	.547	.433	.320	.207	.094	.980	.867
19	.886	.773	.659	.545	.431	.318	.204	.090	.977	.863
20	1.886	3.772	5.657	7.543	9.429	11.315	13.201	15.086	16.972	18.858
21	.885	.771	.656	.542	.427	.312	.198	.083	.969	.854
22	.885	.770	.655	.540	.424	.309	.194	.079	.964	.849
23	.884	.769	.653	.538	.422	.307	.191	.076	.960	.845
24	.884	.768	.652	.536	.420	.304	.188	.072	.956	.840
25	.884	.767	.651	.534	.418	.302	.185	.069	.952	.836
26	.883	.766	.649	.532	.415	.299	.182	.065	.948	.831
27	.883	.765	.648	.531	.413	.296	.179	.062	.944	.827
28	.882	.764	.647	.529	.411	.293	.175	.058	.940	.822
29	.882	.764	.645	.527	.409	.291	.173	.054	.936	.818
30	1.881	3.763	5.644	7.525	9.406	11.288	13.169	15.050	16.932	18.813
31	.881	.762	.643	.524	.404	.285	.166	.047	.928	.809
32	.880	.761	.641	.522	.402	.282	.163	.043	.924	.804
33	.880	.760	.640	.520	.400	.280	.160	.040	.920	.800
34	.879	.759	.638	.518	.397	.277	.156	.036	.915	.795
35	.879	.758	.637	.516	.395	.275	.154	.033	.912	.791
36	.879	.757	.636	.514	.393	.272	.150	.029	.907	.786
37	.878	.756	.635	.513	.391	.269	.147	.026	.904	.782
38	.878	.755	.633	.511	.388	.266	.144	.022	.899	.777
39	.877	.755	.632	.509	.386	.264	.141	.018	.896	.773
40	1.877	3.754	5.630	7.507	9.384	11.261	13.138	15.014	16.891	18.768
41	.876	.753	.629	.506	.382	.258	.135	.011	.888	.764
42	.876	.752	.628	.504	.379	.255	.131	.007	.883	.759
43	.875	.751	.626	.502	.377	.253	.128	.004	.879	.755
44	.875	.750	.625	.500	.375	.250	.125	.000	.875	.750
45	.875	.749	.624	.498	.373	.248	.122	14.997	.871	.746
46	.874	.748	.622	.496	.370	.245	.119	.993	.867	.741
47	.874	.747	.621	.495	.368	.242	.116	.990	.863	.737
48	.873	.746	.620	.493	.366	.239	.112	.986	.859	.732
49	.873	.746	.618	.491	.364	.237	.110	.982	.855	.728
50	1.872	3.745	5.617	7.489	9.361	11.234	13.106	14.978	16.851	18.723
51	.872	.744	.616	.488	.359	.231	.103	.975	.847	.719
52	.871	.743	.614	.486	.357	.228	.100	.971	.843	.714
53	.871	.742	.613	.484	.355	.226	.097	.968	.839	.710
54	.870	.741	.611	.482	.352	.223	.093	.964	.834	.705
55	.870	.740	.610	.480	.350	.221	.091	.961	.831	.701
56	.870	.739	.609	.478	.348	.218	.087	.957	.826	.696
57	.869	.738	.608	.477	.346	.215	.084	.954	.823	.692
58	.869	.738	.606	.475	.344	.213	.082	.950	.819	.688
59	.868	.737	.605	.473	.341	.210	.078	.946	.815	.683
60	1.868	3.736	5.603	7.471	9.339	11.207	13.075	14.942	16.810	18.678

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.002
4	.003
5	.004
6	.006
7	.008
8	.011
9	.014
10	.017

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.428
2	4.856
3	7.284
4	9.712
5	12.140
6	14.569
7	16.997
8	19.425
9	21.853
10	24.281

TABLE XI.—*Co-ordinates for projection of maps. Scale $\frac{1}{30000}$.*

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
40 00	1.868	3.736	5.603	7.471	9.339	11.207	13.075	14.942	16.810	18.678
01	.867	.735	.602	.470	.337	.204	.072	.939	.807	.674
02	.867	.734	.601	.468	.334	.201	.068	.935	.802	.669
03	.866	.733	.599	.466	.332	.199	.065	.932	.798	.665
04	.866	.732	.598	.464	.330	.196	.062	.928	.794	.660
05	.866	.731	.597	.462	.328	.194	.059	.925	.790	.656
06	.865	.730	.595	.460	.325	.191	.056	.921	.786	.651
07	.865	.729	.594	.459	.323	.188	.053	.918	.782	.647
08	.864	.728	.593	.457	.321	.185	.049	.914	.778	.642
09	.864	.728	.591	.455	.319	.183	.047	.910	.774	.638
10	1.863	3.727	5.590	7.453	9.316	11.180	13.043	14.906	16.770	18.633
11	.863	.726	.588	.451	.314	.177	.040	.902	.765	.628
12	.862	.725	.587	.449	.311	.174	.036	.898	.761	.623
13	.862	.724	.586	.448	.309	.171	.033	.895	.757	.619
14	.861	.723	.584	.446	.307	.168	.030	.891	.753	.614
15	.861	.722	.583	.444	.305	.166	.027	.888	.749	.610
16	.860	.721	.581	.442	.302	.163	.023	.884	.744	.605
17	.860	.720	.580	.440	.300	.161	.021	.881	.741	.601
18	.860	.719	.579	.438	.298	.158	.017	.877	.736	.596
19	.859	.718	.578	.437	.296	.155	.014	.874	.733	.592
20	1.859	3.717	5.576	7.435	9.293	11.152	13.011	14.870	16.728	18.587
21	.858	.717	.575	.433	.291	.150	.008	.866	.725	.583
22	.858	.716	.573	.431	.289	.147	.005	.862	.720	.578
23	.857	.715	.572	.429	.286	.144	.001	.858	.716	.573
24	.857	.714	.570	.427	.284	.141	12.998	.854	.711	.568
25	.856	.713	.509	.426	.282	.138	.995	.851	.708	.564
26	.856	.712	.568	.424	.279	.135	.991	.847	.703	.559
27	.855	.711	.566	.422	.277	.133	.988	.844	.699	.555
28	.855	.710	.565	.420	.275	.130	.985	.840	.695	.550
29	.855	.709	.564	.418	.273	.128	.982	.837	.691	.546
30	1.854	3.708	5.562	7.416	9.270	11.125	12.979	14.833	16.687	18.541
31	.854	.707	.561	.415	.268	.122	.976	.830	.683	.537
32	.853	.706	.560	.413	.266	.119	.972	.826	.679	.532
33	.853	.706	.558	.411	.264	.117	.970	.822	.675	.528
34	.852	.705	.557	.409	.261	.114	.966	.818	.671	.523
35	.852	.704	.555	.407	.259	.111	.963	.814	.666	.518
36	.851	.703	.554	.405	.256	.108	.959	.810	.662	.513
37	.851	.702	.553	.404	.254	.105	.956	.807	.658	.509
38	.850	.701	.551	.402	.252	.102	.953	.803	.654	.504
39	.850	.700	.550	.400	.250	.100	.950	.800	.650	.500
40	1.849	3.699	5.548	7.398	9.247	11.097	12.946	14.796	16.645	18.495
41	.849	.698	.547	.396	.245	.095	.944	.793	.642	.491
42	.849	.697	.546	.394	.243	.092	.940	.789	.637	.486
43	.848	.696	.545	.393	.241	.089	.937	.786	.634	.482
44	.848	.695	.543	.391	.238	.086	.934	.782	.629	.477
45	.847	.695	.542	.389	.236	.084	.931	.778	.626	.473
46	.847	.694	.540	.387	.234	.081	.928	.774	.621	.468
47	.846	.693	.539	.385	.231	.078	.924	.770	.617	.463
48	.846	.692	.537	.383	.229	.075	.921	.766	.612	.458
49	.845	.691	.536	.382	.227	.072	.918	.763	.609	.454
50	1.845	3.690	5.535	7.380	9.224	11.069	12.914	14.759	16.604	18.449
51	.844	.689	.533	.378	.222	.067	.911	.756	.600	.445
52	.844	.688	.532	.376	.220	.064	.908	.752	.596	.440
53	.844	.687	.531	.374	.218	.062	.905	.749	.592	.436
54	.843	.686	.529	.372	.215	.059	.902	.745	.588	.431
55	.843	.685	.528	.371	.213	.056	.899	.742	.584	.427
56	.842	.684	.527	.369	.211	.053	.895	.738	.580	.422
57	.842	.684	.525	.367	.209	.051	.893	.734	.576	.418
58	.841	.683	.524	.365	.206	.048	.889	.730	.572	.413
59	.841	.682	.522	.363	.204	.045	.886	.726	.567	.408
60	1.840	3.681	5.521	7.361	9.201	11.042	12.882	14.722	16.563	18.403

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.002
4	.003
5	.004
6	.006
7	.009
8	.011
9	.014
10	.017

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.429
2	4.857
3	7.286
4	9.714
5	12.143
6	14.572
7	17.000
8	19.429
9	21.857
10	24.286

TABLE XI.—*Co-ordinates for projection of maps.* *Scale* $\frac{1}{30000}$.

[Derivation of table explained in section (5) ; use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
41 00	1.840	3.681	5.521	7.361	9.201	11.042	12.882	14.722	16.563	18.403
01	.840	.680	.519	.359	.199	.039	.879	.718	.558	.398
02	.839	.679	.518	.358	.197	.036	.876	.715	.555	.394
03	.839	.678	.517	.356	.194	.033	.872	.711	.550	.389
04	.838	.677	.515	.354	.192	.030	.869	.707	.546	.384
05	.838	.676	.514	.352	.190	.028	.866	.704	.542	.380
06	.837	.675	.512	.350	.187	.025	.862	.700	.537	.375
07	.837	.674	.511	.348	.185	.022	.859	.696	.533	.370
08	.837	.673	.510	.346	.183	.020	.856	.693	.529	.366
09	.836	.672	.508	.344	.180	.017	.853	.689	.525	.361
10	1.836	3.671	5.507	7.342	9.178	11.014	12.849	14.685	16.520	18.356
11	.835	.670	.506	.341	.176	.011	.846	.682	.517	.352
12	.835	.669	.504	.339	.173	.008	.843	.678	.512	.347
13	.834	.668	.503	.337	.171	.005	.839	.674	.508	.342
14	.834	.668	.501	.335	.169	.003	.837	.670	.504	.338
15	.833	.667	.500	.333	.166	.000	.833	.666	.500	.333
16	.833	.666	.498	.331	.164	10.997	.830	.662	.495	.328
17	.832	.665	.497	.330	.162	.994	.827	.659	.492	.324
18	.832	.664	.496	.328	.159	.991	.823	.655	.487	.319
19	.831	.663	.494	.326	.157	.988	.820	.651	.483	.314
20	1.831	3.662	5.493	7.324	9.155	10.986	12.817	14.648	16.479	18.310
21	.830	.661	.491	.322	.152	.983	.813	.644	.474	.305
22	.830	.660	.490	.320	.150	.980	.810	.640	.470	.300
23	.830	.659	.489	.318	.148	.978	.807	.637	.466	.296
24	.829	.658	.487	.316	.145	.975	.804	.633	.462	.291
25	.829	.657	.486	.314	.143	.972	.800	.629	.457	.286
26	.828	.656	.485	.313	.141	.969	.797	.626	.454	.282
27	.828	.655	.483	.311	.138	.966	.794	.622	.449	.277
28	.827	.654	.482	.309	.136	.963	.790	.618	.445	.272
29	.827	.654	.480	.307	.134	.961	.788	.614	.441	.268
30	1.826	3.653	5.479	7.305	9.131	10.958	12.784	14.610	16.437	18.263
31	.826	.652	.477	.303	.129	.955	.781	.606	.432	.258
32	.825	.651	.476	.301	.126	.952	.777	.602	.428	.253
33	.825	.650	.474	.299	.124	.949	.774	.598	.423	.248
34	.824	.649	.473	.297	.121	.946	.770	.594	.419	.243
35	.824	.648	.472	.296	.119	.943	.767	.591	.415	.239
36	.823	.647	.470	.294	.117	.940	.764	.587	.411	.234
37	.823	.646	.469	.292	.114	.937	.760	.583	.406	.229
38	.822	.645	.467	.290	.112	.935	.757	.580	.402	.225
39	.822	.644	.466	.288	.110	.932	.754	.576	.398	.220
40	1.821	3.643	5.464	7.286	9.107	10.929	12.750	14.572	16.393	18.215
41	.821	.642	.463	.284	.105	.927	.748	.569	.390	.211
42	.821	.641	.462	.282	.103	.924	.744	.565	.385	.206
43	.820	.640	.460	.280	.100	.921	.741	.561	.381	.201
44	.820	.639	.459	.279	.098	.918	.738	.558	.377	.197
45	.819	.638	.458	.277	.096	.915	.734	.554	.373	.192
46	.819	.637	.456	.275	.093	.912	.731	.550	.368	.187
47	.818	.637	.455	.273	.091	.910	.728	.546	.365	.183
48	.818	.636	.453	.271	.089	.907	.725	.542	.360	.178
49	.817	.635	.452	.269	.086	.904	.721	.538	.356	.173
50	1.817	3.634	5.451	7.268	9.084	10.901	12.718	14.535	16.352	18.169
51	.816	.633	.449	.266	.082	.898	.715	.531	.348	.164
52	.816	.632	.448	.264	.079	.895	.711	.527	.343	.159
53	.815	.631	.446	.262	.077	.893	.708	.524	.339	.155
54	.815	.630	.445	.260	.075	.890	.705	.520	.335	.150
55	.814	.629	.443	.258	.072	.887	.701	.516	.330	.145
56	.814	.628	.442	.256	.070	.885	.699	.513	.327	.141
57	.814	.627	.441	.254	.068	.882	.695	.509	.322	.136
58	.813	.626	.439	.252	.065	.879	.692	.505	.318	.131
59	.813	.625	.438	.251	.063	.876	.689	.502	.314	.127
60	1.812	3.624	5.437	7.249	9.061	10.873	12.685	14.498	16.310	18.122

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.002
4	.003
5	.004
6	.006
7	.009
8	.011
9	.014
10	.018

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.429
2	4.858
3	7.287
4	9.716
5	12.145
6	14.574
7	17.003
8	19.432
9	21.861
10	24.290

TABLE XI.—*Co-ordinates for projection of maps. Scale* $\frac{1}{30000}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
42 00	1.812	3.624	5.437	7.249	9.061	10.873	12.685	14.498	16.310	18.122
01	.812	.623	.435	.247	.058	.870	.682	.494	.305	.117
02	.811	.622	.434	.245	.056	.867	.678	.490	.301	.112
03	.811	.622	.432	.243	.054	.865	.676	.486	.297	.108
04	.810	.621	.431	.241	.051	.862	.672	.482	.293	.103
05	.810	.620	.429	.239	.049	.859	.669	.478	.288	.098
06	.809	.619	.428	.237	.046	.856	.665	.474	.284	.093
07	.809	.618	.427	.236	.044	.853	.662	.471	.280	.089
08	.808	.617	.425	.234	.042	.850	.659	.467	.276	.084
09	.808	.616	.424	.232	.039	.847	.655	.463	.271	.079
10	1.807	3.615	5.422	7.230	9.037	10.844	12.652	14.459	16.267	18.074
11	.807	.614	.421	.228	.035	.842	.649	.456	.263	.070
12	.806	.613	.419	.226	.032	.839	.645	.452	.258	.065
13	.806	.612	.418	.224	.030	.836	.642	.448	.254	.060
14	.805	.611	.416	.222	.027	.833	.638	.444	.249	.055
15	.805	.610	.415	.220	.025	.831	.636	.441	.246	.051
16	.805	.609	.414	.218	.023	.828	.632	.437	.241	.046
17	.804	.608	.412	.216	.020	.825	.629	.433	.237	.041
18	.804	.607	.411	.214	.018	.822	.625	.429	.232	.036
19	.803	.606	.410	.213	.016	.819	.622	.426	.229	.032
20	1.803	3.605	5.408	7.211	9.013	10.816	12.619	14.422	16.224	18.027
21	.802	.604	.407	.209	.011	.813	.615	.418	.220	.022
22	.802	.603	.405	.207	.008	.810	.612	.414	.215	.017
23	.801	.603	.404	.205	.006	.808	.609	.410	.212	.013
24	.801	.602	.402	.203	.004	.805	.606	.406	.207	.008
25	.800	.601	.401	.201	.001	.802	.602	.402	.203	.003
26	.800	.600	.399	.199	8.999	.799	.599	.398	.198	17.998
27	.799	.599	.398	.198	.997	.796	.596	.395	.195	.994
28	.799	.598	.397	.196	.994	.793	.592	.391	.190	.989
29	.798	.597	.395	.194	.992	.790	.589	.387	.186	.984
30	1.798	3.596	5.394	7.192	8.989	10.787	12.585	14.383	16.181	17.979
31	.797	.595	.392	.190	.987	.785	.582	.380	.177	.975
32	.797	.594	.391	.188	.985	.782	.579	.376	.173	.970
33	.796	.593	.389	.186	.982	.779	.575	.372	.168	.965
34	.796	.592	.358	.184	.980	.776	.572	.368	.164	.960
35	.796	.591	.387	.182	.978	.774	.569	.365	.160	.956
36	.795	.590	.385	.180	.975	.771	.566	.361	.156	.951
37	.795	.589	.384	.178	.973	.768	.562	.357	.151	.946
38	.794	.588	.382	.176	.970	.765	.559	.353	.147	.941
39	.794	.587	.381	.175	.968	.762	.556	.350	.143	.937
40	1.793	3.586	5.380	7.173	8.966	10.759	12.552	14.346	16.139	17.932
41	.793	.585	.378	.171	.963	.756	.549	.342	.134	.927
42	.792	.584	.377	.169	.961	.753	.545	.338	.130	.922
43	.792	.584	.375	.167	.959	.751	.543	.334	.126	.918
44	.791	.583	.374	.165	.956	.748	.539	.330	.122	.913
45	.791	.582	.372	.163	.954	.745	.536	.326	.117	.908
46	.790	.581	.371	.161	.951	.742	.532	.322	.113	.903
47	.790	.580	.369	.159	.949	.739	.529	.318	.108	.898
48	.789	.579	.368	.158	.947	.736	.526	.315	.105	.894
49	.789	.578	.367	.156	.944	.733	.522	.311	.100	.889
50	1.788	3.577	5.365	7.154	8.942	10.730	12.519	14.307	16.096	17.884
51	.788	.576	.364	.152	.940	.728	.516	.304	.092	.880
52	.787	.575	.362	.150	.937	.725	.512	.300	.087	.875
53	.787	.574	.361	.148	.935	.722	.509	.296	.083	.870
54	.786	.573	.359	.146	.932	.719	.505	.292	.078	.865
55	.786	.572	.358	.144	.930	.717	.503	.289	.075	.861
56	.786	.571	.357	.142	.928	.714	.499	.285	.070	.856
57	.785	.570	.355	.140	.925	.711	.496	.281	.066	.851
58	.785	.569	.354	.138	.923	.708	.492	.277	.061	.846
59	.784	.568	.353	.137	.921	.705	.489	.274	.058	.842
60	1.784	3.567	5.351	7.134	8.918	10.702	12.485	14.269	16.052	17.836

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.002
4	.003
5	.004
6	.006
7	.009
8	.011
9	.014
10	.018

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.429
2	4.859
3	7.288
4	9.718
5	12.147
6	14.576
7	17.006
8	19.435
9	21.865
10	24.294

TABLE XI.—*Co-ordinates for projection of maps. Scale $\frac{1}{30000}$.*

[Derivation of table explained in section (5) use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
43 00	1.784	3.567	5.351	7.134	8.918	10.702	12.485	14.269	16.052	17.836
01	.783	.566	.349	.132	.915	.699	.482	.265	.048	.831
02	.783	.565	.348	.130	.913	.696	.478	.261	.043	.826
03	.782	.564	.346	.128	.910	.693	.475	.257	.039	.821
04	.782	.563	.345	.126	.908	.690	.471	.253	.034	.816
05	.781	.562	.344	.125	.906	.687	.468	.250	.031	.812
06	.781	.561	.342	.123	.903	.684	.465	.246	.026	.807
07	.780	.560	.341	.121	.901	.681	.461	.242	.022	.802
08	.780	.559	.339	.119	.898	.678	.458	.238	.017	.797
09	.779	.558	.338	.117	.896	.675	.454	.234	.013	.792
10	1.779	3.557	5.336	7.115	8.893	10.672	12.451	14.230	16.008	17.787
11	.778	.556	.335	.113	.891	.669	.447	.226	.004	.782
12	.778	.556	.333	.111	.889	.667	.445	.222	.000	.778
13	.777	.555	.332	.109	.886	.664	.441	.218	15.996	.773
14	.777	.554	.330	.107	.884	.661	.438	.214	.991	.768
15	.776	.553	.329	.105	.881	.658	.434	.210	.987	.763
16	.776	.552	.327	.103	.879	.655	.431	.206	.982	.758
17	.775	.551	.326	.101	.876	.652	.427	.202	.978	.753
18	.775	.550	.324	.099	.874	.649	.424	.198	.973	.748
19	.774	.549	.323	.097	.871	.646	.420	.194	.969	.743
20	1.774	3.548	5.321	7.095	8.869	10.643	12.417	14.190	15.964	17.738
21	.773	.547	.320	.093	.866	.640	.413	.186	.960	.733
22	.773	.546	.318	.091	.864	.637	.410	.182	.955	.728
23	.772	.545	.317	.090	.862	.634	.407	.179	.952	.724
24	.772	.544	.316	.088	.859	.631	.403	.175	.947	.719
25	.771	.543	.314	.086	.857	.628	.400	.171	.943	.714
26	.771	.542	.313	.084	.854	.625	.396	.167	.938	.709
27	.770	.541	.311	.082	.852	.622	.393	.163	.934	.704
28	.770	.540	.310	.080	.849	.619	.389	.159	.929	.699
29	.769	.539	.308	.078	.847	.616	.386	.155	.925	.694
30	1.769	3.538	5.307	7.076	8.844	10.613	12.382	14.151	15.920	17.689
31	.768	.537	.305	.074	.842	.610	.379	.147	.916	.684
32	.768	.536	.304	.072	.840	.608	.376	.144	.912	.680
33	.767	.535	.302	.070	.837	.605	.372	.140	.907	.675
34	.767	.534	.301	.068	.835	.602	.369	.136	.903	.670
35	.766	.533	.299	.066	.832	.599	.365	.132	.898	.665
36	.766	.532	.298	.064	.830	.596	.362	.128	.894	.660
37	.765	.531	.296	.062	.827	.593	.358	.124	.889	.655
38	.765	.530	.295	.060	.825	.590	.355	.120	.885	.650
39	.764	.529	.293	.058	.822	.587	.351	.116	.880	.645
40	1.764	3.528	5.292	7.056	8.820	10.584	12.348	14.112	15.876	17.640
41	.764	.527	.291	.054	.818	.582	.345	.109	.872	.636
42	.763	.526	.289	.052	.815	.579	.342	.105	.868	.631
43	.763	.525	.288	.050	.813	.576	.338	.101	.863	.626
44	.762	.524	.286	.048	.810	.573	.335	.097	.859	.621
45	.762	.523	.285	.046	.808	.570	.331	.093	.854	.616
46	.761	.522	.283	.044	.805	.567	.328	.089	.850	.611
47	.761	.521	.282	.042	.803	.564	.324	.085	.845	.606
48	.760	.520	.280	.040	.800	.561	.321	.081	.841	.601
49	.760	.519	.279	.038	.798	.558	.317	.077	.836	.596
50	1.759	3.518	5.278	7.037	8.796	10.555	12.314	14.074	15.833	17.592
51	.759	.517	.276	.035	.793	.552	.311	.070	.828	.587
52	.758	.516	.275	.033	.791	.549	.307	.066	.824	.582
53	.758	.515	.273	.031	.788	.546	.304	.062	.819	.577
54	.757	.514	.272	.029	.786	.543	.300	.058	.815	.572
55	.757	.513	.270	.027	.783	.540	.297	.054	.810	.567
56	.756	.512	.269	.025	.781	.537	.293	.050	.806	.562
57	.756	.511	.267	.023	.778	.534	.290	.046	.801	.557
58	.755	.510	.266	.021	.776	.531	.286	.042	.797	.552
59	.755	.510	.264	.019	.774	.529	.284	.038	.793	.548
60	1.754	3.509	5.263	7.017	8.771	10.526	12.280	14.034	15.789	17.543

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.002
4	.003
5	.004
6	.006
7	.009
8	.011
9	.014
10	.018

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.430
2	4.860
3	7.289
4	9.719
5	12.149
6	14.579
7	17.009
8	19.438
9	21.868
10	24.298

TABLE XI.—*Co-ordinates for projection of maps. Scale* $\frac{1}{30000}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
44 00	1.754	3.509	5.263	7.017	8.771	10.526	12.280	14.034	15.789	17.543
01	.754	.508	.261	.015	.769	.523	.277	.030	.784	.538
02	.753	.507	.260	.013	.766	.520	.273	.026	.780	.533
03	.753	.506	.258	.011	.764	.517	.270	.022	.775	.528
04	.752	.505	.257	.009	.761	.514	.266	.018	.771	.523
05	.752	.504	.255	.007	.759	.511	.263	.014	.766	.518
06	.751	.503	.254	.005	.756	.508	.259	.010	.762	.513
07	.751	.502	.252	.003	.754	.505	.256	.006	.757	.508
08	.750	.501	.251	.001	.751	.502	.252	.002	.753	.503
09	.750	.500	.249	6.999	.749	.499	.249	13.998	.748	.498
10	1.749	3.499	5.248	6.997	8.746	10.496	12.245	13.994	15.744	17.493
11	.749	.498	.247	.996	.744	.493	.242	.991	.740	.489
12	.748	.497	.245	.994	.742	.490	.239	.987	.736	.484
13	.748	.496	.244	.992	.739	.487	.235	.983	.731	.479
14	.747	.495	.242	.990	.737	.484	.232	.979	.727	.474
15	.747	.494	.241	.988	.734	.481	.228	.975	.722	.469
16	.746	.493	.239	.986	.732	.478	.225	.971	.718	.464
17	.746	.492	.238	.984	.729	.475	.221	.967	.713	.459
18	.745	.491	.236	.982	.727	.472	.218	.963	.709	.454
19	.745	.490	.235	.980	.724	.469	.214	.959	.704	.449
20	1.744	3.489	5.233	6.978	8.722	10.466	12.211	13.955	15.700	17.444
21	.744	.488	.232	.976	.719	.463	.207	.951	.695	.439
22	.743	.487	.230	.974	.717	.460	.204	.947	.691	.434
23	.743	.486	.229	.972	.714	.457	.200	.943	.686	.429
24	.742	.485	.227	.970	.712	.454	.197	.939	.682	.424
25	.742	.484	.226	.968	.709	.451	.193	.935	.677	.419
26	.741	.483	.224	.966	.707	.448	.190	.931	.673	.414
27	.741	.482	.223	.964	.704	.445	.186	.927	.668	.409
28	.740	.481	.221	.962	.702	.442	.183	.923	.664	.404
29	.740	.480	.220	.960	.699	.439	.179	.919	.659	.399
30	1.739	3.479	5.218	6.958	8.697	10.436	12.176	13.915	15.655	17.394
31	.739	.478	.217	.956	.695	.434	.173	.912	.651	.390
32	.738	.477	.215	.954	.692	.431	.169	.908	.646	.385
33	.738	.476	.214	.952	.690	.428	.166	.904	.642	.380
34	.737	.475	.212	.950	.687	.425	.162	.900	.637	.375
35	.737	.474	.211	.948	.685	.422	.159	.896	.633	.370
36	.736	.473	.209	.946	.682	.419	.155	.892	.628	.365
37	.736	.472	.208	.944	.680	.416	.152	.888	.624	.360
38	.735	.471	.206	.942	.677	.413	.148	.884	.619	.355
39	.735	.470	.205	.940	.675	.410	.145	.880	.615	.350
40	1.734	3.469	5.203	6.938	8.672	10.407	12.141	13.876	15.610	17.345
41	.734	.468	.202	.936	.670	.404	.138	.872	.606	.340
42	.733	.467	.200	.934	.667	.401	.134	.868	.601	.335
43	.733	.466	.199	.932	.665	.398	.131	.864	.597	.330
44	.732	.465	.197	.930	.662	.395	.127	.860	.592	.325
45	.732	.464	.196	.928	.660	.392	.124	.856	.588	.320
46	.731	.463	.194	.926	.657	.389	.120	.852	.583	.315
47	.731	.462	.193	.924	.655	.386	.117	.848	.579	.310
48	.730	.461	.191	.922	.652	.383	.113	.844	.574	.305
49	.730	.460	.190	.920	.650	.380	.110	.840	.570	.300
50	1.729	3.459	5.188	6.918	8.647	10.377	12.106	13.836	15.565	17.295
51	.729	.458	.187	.916	.645	.375	.104	.833	.562	.291
52	.729	.457	.186	.914	.643	.372	.100	.829	.557	.286
53	.728	.456	.184	.912	.640	.369	.097	.825	.553	.281
54	.728	.455	.183	.910	.638	.366	.093	.821	.548	.276
55	.727	.454	.181	.908	.635	.363	.090	.817	.544	.271
56	.727	.453	.180	.906	.633	.360	.086	.813	.539	.266
57	.726	.452	.178	.904	.630	.357	.083	.809	.535	.261
58	.726	.451	.177	.902	.628	.354	.079	.805	.530	.256
59	.725	.450	.175	.900	.625	.351	.076	.801	.526	.251
60	1.725	3.449	5.174	6.898	8.623	10.348	12.072	13.797	15.521	17.246

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.002
4	.003
5	.004
6	.006
7	.009
8	.011
9	.014
10	.018

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.430
2	4.861
3	7.291
4	9.722
5	12.152
6	14.582
7	17.013
8	19.443
9	21.874
10	24.304

TABLE XI.—*Co-ordinates for projection of maps. Scale $\frac{1}{30000}$.*

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
45 00	1.725	3.449	5.174	6.898	8.623	10.348	12.072	13.797	15.521	17.246
01	.724	.448	.172	.896	.620	.345	.069	.793	.517	.241
02	.724	.447	.171	.894	.618	.342	.065	.789	.512	.236
03	.723	.446	.169	.892	.615	.339	.062	.785	.508	.231
04	.723	.445	.168	.890	.613	.336	.058	.781	.503	.226
05	.722	.444	.166	.888	.610	.333	.055	.777	.499	.221
06	.722	.443	.165	.886	.608	.330	.051	.773	.494	.216
07	.721	.442	.163	.884	.605	.327	.048	.769	.490	.211
08	.721	.441	.162	.882	.603	.324	.044	.765	.485	.206
09	.720	.440	.160	.880	.600	.321	.041	.761	.481	.201
10	1.720	3.439	5.159	6.878	8.598	10.318	12.037	13.757	15.476	17.196
11	.719	.438	.157	.876	.595	.315	.034	.753	.472	.191
12	.719	.437	.156	.874	.593	.312	.030	.749	.467	.186
13	.718	.436	.154	.872	.590	.309	.027	.745	.463	.181
14	.718	.435	.153	.870	.588	.306	.023	.741	.458	.176
15	.717	.434	.151	.868	.585	.303	.020	.737	.454	.171
16	.717	.433	.150	.866	.583	.300	.016	.733	.449	.166
17	.716	.432	.148	.864	.580	.297	.013	.729	.445	.161
18	.716	.431	.147	.862	.578	.294	.009	.725	.440	.156
19	.715	.430	.145	.860	.575	.291	.006	.721	.436	.151
20	1.715	3.429	5.144	6.858	8.573	10.288	12.002	13.717	15.431	17.146
21	.714	.428	.142	.856	.570	.285	11.999	.713	.427	.141
22	.714	.427	.141	.854	.568	.282	.995	.709	.422	.136
23	.713	.426	.139	.852	.565	.279	.992	.705	.418	.131
24	.713	.425	.138	.850	.563	.276	.988	.701	.413	.126
25	.712	.424	.136	.848	.560	.273	.985	.697	.409	.121
26	.712	.423	.135	.846	.558	.270	.981	.693	.404	.116
27	.711	.422	.133	.844	.555	.267	.978	.689	.400	.111
28	.711	.421	.132	.842	.553	.264	.974	.685	.395	.106
29	.710	.420	.130	.840	.550	.261	.971	.681	.391	.101
30	1.710	3.419	5.129	6.838	8.548	10.258	11.967	13.677	15.386	17.096
31	.709	.418	.127	.836	.545	.254	.963	.672	.381	.090
32	.708	.417	.125	.834	.542	.251	.959	.668	.376	.085
33	.708	.416	.124	.832	.540	.248	.956	.664	.372	.080
34	.707	.415	.122	.830	.537	.245	.952	.660	.367	.075
35	.707	.414	.121	.828	.535	.242	.949	.656	.363	.070
36	.706	.413	.119	.826	.532	.239	.945	.652	.358	.065
37	.706	.412	.118	.824	.530	.236	.942	.648	.354	.060
38	.705	.411	.116	.822	.527	.233	.938	.644	.349	.055
39	.705	.410	.115	.820	.525	.230	.935	.640	.345	.050
40	1.704	3.409	5.113	6.818	8.522	10.227	11.931	13.636	15.340	17.045
41	.704	.408	.112	.816	.520	.224	.928	.632	.336	.040
42	.703	.407	.110	.814	.517	.221	.924	.628	.331	.035
43	.703	.406	.109	.812	.515	.218	.921	.624	.327	.030
44	.702	.405	.107	.810	.512	.215	.917	.620	.322	.025
45	.702	.404	.106	.808	.510	.212	.914	.616	.318	.020
46	.701	.403	.104	.806	.507	.209	.910	.612	.313	.015
47	.701	.402	.103	.804	.505	.206	.907	.608	.309	.010
48	.700	.401	.101	.802	.502	.203	.903	.604	.304	.005
49	.700	.400	.100	.800	.500	.200	.900	.600	.300	.000
50	1.699	3.399	5.098	6.798	8.497	10.197	11.896	13.596	15.295	16.995
51	.699	.398	.097	.796	.495	.194	.893	.592	.291	.990
52	.698	.397	.095	.794	.492	.191	.889	.588	.286	.985
53	.698	.396	.094	.792	.490	.188	.886	.584	.282	.980
54	.697	.395	.092	.790	.487	.185	.882	.580	.277	.975
55	.697	.394	.091	.788	.485	.182	.879	.576	.273	.970
56	.696	.393	.089	.786	.482	.179	.875	.572	.268	.965
57	.696	.392	.088	.784	.480	.176	.872	.568	.264	.960
58	.695	.391	.086	.782	.477	.173	.868	.564	.259	.955
59	.695	.390	.085	.780	.475	.170	.865	.560	.255	.950
60	1.694	3.389	5.083	6.778	8.472	10.166	11.861	13.555	15.250	16.944

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.002
4	.003
5	.004
6	.006
7	.009
8	.011
9	.014
10	.018

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.43
2	4.86
3	7.29
4	9.72
5	12.15
6	14.58
7	17.01
8	19.44
9	21.87
10	24.30

TABLE XI.—*Co-ordinates for projection of maps. Scale $\frac{1}{30000}$.*

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
46 00	1.694	3.389	5.083	6.778	8.472	10.166	11.861	13.555	15.250	16.944
01	.694	.388	.082	.776	.469	.163	.857	.551	.245	.939
02	.693	.387	.080	.774	.467	.160	.854	.547	.241	.934
03	.693	.386	.079	.772	.464	.157	.850	.543	.236	.929
04	.692	.385	.077	.770	.462	.154	.847	.539	.232	.924
05	.692	.384	.075	.767	.459	.151	.843	.534	.226	.918
06	.691	.383	.074	.765	.456	.148	.839	.530	.221	.913
07	.691	.382	.072	.763	.454	.145	.836	.526	.217	.908
08	.690	.381	.071	.761	.451	.142	.832	.522	.213	.903
09	.690	.380	.069	.759	.449	.139	.829	.518	.208	.898
10	1.689	3.379	5.068	6.757	8.446	10.136	11.825	13.514	15.204	16.898
11	.689	.378	.066	.755	.444	.133	.822	.510	.199	.888
12	.688	.376	.065	.753	.441	.129	.817	.506	.194	.882
13	.688	.375	.063	.751	.438	.126	.814	.502	.189	.877
14	.687	.374	.062	.749	.436	.123	.810	.498	.185	.872
15	.687	.373	.060	.747	.433	.120	.807	.494	.180	.867
16	.686	.372	.059	.745	.431	.117	.803	.490	.176	.862
17	.686	.371	.057	.743	.428	.114	.800	.486	.171	.857
18	.685	.370	.056	.741	.426	.111	.796	.482	.167	.852
19	.685	.369	.054	.738	.423	.108	.792	.477	.161	.846
20	1.684	3.368	5.052	6.736	8.420	10.105	11.789	13.473	15.157	16.841
21	.684	.367	.051	.734	.418	.102	.785	.469	.152	.836
22	.683	.366	.049	.732	.415	.099	.782	.465	.148	.831
23	.683	.365	.048	.730	.413	.096	.778	.461	.143	.826
24	.682	.364	.046	.728	.410	.093	.775	.457	.139	.821
25	.682	.363	.045	.726	.408	.090	.771	.453	.134	.816
26	.681	.362	.043	.724	.405	.086	.767	.448	.129	.810
27	.680	.361	.041	.722	.402	.083	.763	.444	.124	.805
28	.680	.360	.040	.720	.400	.080	.760	.440	.120	.800
29	.679	.359	.038	.718	.397	.077	.756	.436	.115	.795
30	1.679	3.358	5.037	6.716	8.395	10.074	11.753	13.432	15.111	16.790
31	.678	.357	.035	.714	.392	.071	.749	.428	.106	.785
32	.678	.356	.034	.712	.390	.068	.746	.424	.102	.780
33	.677	.355	.032	.710	.387	.064	.742	.419	.097	.774
34	.677	.354	.031	.708	.384	.061	.738	.415	.092	.769
35	.676	.353	.029	.706	.382	.058	.735	.411	.088	.764
36	.676	.352	.028	.704	.379	.055	.731	.407	.083	.759
37	.675	.351	.026	.702	.377	.052	.728	.403	.079	.754
38	.675	.350	.025	.700	.374	.049	.724	.399	.074	.749
39	.674	.349	.023	.698	.372	.046	.721	.395	.070	.744
40	1.674	3.348	5.021	6.695	8.369	10.048	11.717	13.390	15.064	16.738
41	.673	.347	.020	.693	.366	.040	.713	.386	.060	.733
42	.673	.346	.018	.691	.364	.037	.710	.382	.055	.728
43	.672	.345	.017	.689	.361	.033	.706	.378	.051	.723
44	.672	.344	.015	.687	.359	.031	.708	.374	.046	.718
45	.671	.343	.014	.685	.356	.028	.699	.370	.042	.713
46	.671	.342	.012	.683	.354	.025	.696	.366	.037	.708
47	.670	.340	.011	.681	.351	.021	.691	.362	.032	.702
48	.670	.339	.009	.679	.348	.018	.688	.358	.027	.697
49	.669	.338	.008	.677	.346	.015	.684	.354	.023	.692
50	1.669	3.337	5.006	6.675	8.343	10.012	11.681	13.350	15.018	11.687
51	.668	.336	.005	.673	.341	.009	.677	.346	.014	.682
52	.668	.335	.003	.671	.338	.006	.674	.342	.009	.677
53	.667	.334	.002	.669	.336	.003	.670	.338	.005	.672
54	.667	.333	.000	.666	.333	.000	.666	.333	14.999	.666
55	.666	.332	4.998	.664	.330	9.997	.663	.329	.995	.661
56	.666	.331	.997	.662	.328	.994	.659	.325	.990	.656
57	.665	.330	.995	.660	.325	.991	.656	.321	.986	.651
58	.665	.329	.994	.658	.323	.988	.652	.317	.981	.646
59	.664	.328	.992	.656	.320	.985	.649	.313	.977	.641
60	1.664	3.327	4.991	6.654	8.318	9.982	11.645	13.309	14.972	16.636

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.002
4	.003
5	.004
6	.006
7	.009
8	.011
9	.014
10	.018

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.431
2	4.863
3	7.294
4	9.725
5	12.156
6	14.588
7	17.019
8	19.450
9	21.882
10	24.313

TABLE XI.—*Co-ordinates for projection of maps. Scale* $\frac{1}{30000}$.

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
47 00	1.664	3.327	4.991	6.654	8.318	9.982	11.645	13.309	14.972	16.636
01	.663	.326	.989	.652	.315	.979	.642	.305	.968	.631
02	.663	.325	.988	.650	.313	.976	.638	.301	.963	.626
03	.662	.324	.986	.648	.310	.973	.635	.297	.959	.621
04	.661	.323	.984	.646	.307	.969	.630	.292	.953	.615
05	.661	.322	.983	.644	.305	.966	.627	.288	.949	.610
06	.660	.321	.981	.642	.302	.963	.623	.284	.944	.605
07	.660	.320	.980	.640	.300	.960	.620	.280	.940	.600
08	.659	.319	.978	.638	.297	.956	.616	.275	.935	.594
09	.659	.318	.977	.636	.294	.953	.612	.271	.930	.589
10	1.658	3.317	4.975	6.634	8.292	9.950	11.609	13.267	14.926	16.584
11	.658	.316	.974	.632	.289	.947	.605	.263	.921	.579
12	.657	.315	.972	.629	.286	.944	.601	.258	.916	.573
13	.657	.314	.970	.627	.284	.941	.598	.254	.911	.568
14	.656	.313	.969	.625	.281	.938	.594	.250	.907	.563
15	.656	.312	.967	.623	.279	.935	.591	.246	.902	.558
16	.655	.310	.966	.621	.276	.931	.586	.242	.897	.552
17	.655	.309	.964	.619	.273	.928	.583	.238	.892	.547
18	.654	.308	.963	.617	.271	.925	.579	.234	.888	.542
19	.654	.307	.961	.615	.268	.922	.576	.230	.883	.537
20	1.653	3.306	4.959	6.612	8.265	9.919	11.572	13.225	14.878	16.531
21	.653	.305	.958	.610	.263	.916	.568	.221	.873	.526
22	.652	.304	.956	.608	.260	.913	.565	.217	.869	.521
23	.652	.303	.955	.606	.258	.910	.561	.213	.864	.516
24	.651	.302	.953	.604	.255	.906	.557	.208	.859	.510
25	.650	.301	.951	.602	.252	.903	.553	.204	.854	.505
26	.650	.300	.950	.600	.250	.900	.550	.200	.850	.500
27	.649	.299	.948	.598	.247	.897	.546	.196	.845	.495
28	.649	.298	.947	.596	.244	.893	.542	.191	.840	.489
29	.648	.297	.945	.594	.242	.890	.539	.187	.836	.484
30	1.648	3.296	4.944	6.592	8.239	9.887	11.535	13.183	14.831	16.479
31	.647	.295	.942	.590	.237	.884	.532	.179	.827	.474
32	.647	.294	.941	.588	.234	.881	.528	.175	.822	.469
33	.646	.293	.939	.586	.232	.878	.525	.171	.818	.464
34	.646	.292	.937	.583	.229	.875	.521	.166	.812	.458
35	.645	.291	.936	.581	.226	.872	.517	.162	.808	.453
36	.645	.290	.934	.579	.224	.869	.514	.158	.803	.448
37	.644	.289	.933	.577	.221	.866	.510	.154	.799	.443
38	.644	.287	.931	.575	.218	.862	.506	.150	.793	.437
39	.643	.286	.930	.573	.216	.859	.502	.146	.789	.432
40	1.643	3.285	4.928	6.571	8.213	9.856	11.499	13.142	14.784	16.427
41	.642	.284	.927	.569	.211	.853	.495	.138	.780	.422
42	.642	.283	.925	.566	.208	.850	.491	.133	.774	.416
43	.641	.282	.923	.564	.205	.847	.488	.129	.770	.411
44	.641	.281	.922	.562	.203	.844	.484	.125	.765	.406
45	.640	.280	.920	.560	.200	.841	.481	.121	.761	.401
46	.639	.279	.918	.558	.197	.837	.476	.116	.755	.395
47	.639	.278	.917	.556	.195	.834	.473	.112	.751	.390
48	.638	.277	.915	.554	.192	.831	.469	.108	.746	.385
49	.638	.276	.914	.552	.190	.828	.466	.104	.742	.380
50	1.637	3.275	4.912	6.550	8.187	9.824	11.462	13.099	14.737	16.374
51	.637	.274	.911	.548	.184	.821	.458	.095	.732	.369
52	.636	.273	.909	.546	.182	.818	.455	.091	.728	.364
53	.636	.272	.908	.544	.179	.815	.451	.087	.723	.359
54	.635	.271	.906	.541	.176	.812	.447	.082	.718	.353
55	.635	.270	.904	.539	.174	.809	.444	.078	.713	.348
56	.634	.269	.903	.537	.171	.806	.440	.074	.709	.343
57	.634	.268	.901	.535	.169	.803	.437	.070	.704	.338
58	.633	.266	.900	.533	.166	.799	.432	.066	.699	.332
59	.633	.265	.898	.531	.163	.796	.429	.062	.694	.327
60	1.632	3.265	4.897	6.529	8.161	9.794	11.426	13.058	14.691	16.323

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.002
4	.003
5	.004
6	.006
7	.009
8	.011
9	.014
10	.018

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.432
2	4.863
3	7.294
4	9.726
5	12.157
6	14.589
7	17.020
8	19.452
9	21.883
10	24.315

TABLE XI.—*Co-ordinates for projection of maps. Scale* [illegible].

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
48 00	1.632	3.265	4.897	6.529	8.161	9.794	11.426	13.058	14.691	16.323
01	.632	.264	.895	.527	.159	.791	.423	.054	.686	.318
02	.631	.263	.894	.525	.156	.788	.419	.050	.682	.313
03	.631	.262	.892	.523	.154	.785	.416	.046	.677	.308
04	.630	.260	.891	.521	.151	.781	.411	.042	.672	.302
05	.630	.259	.889	.519	.148	.778	.408	.038	.667	.297
06	.629	.258	.888	.517	.146	.775	.404	.034	.663	.292
07	.629	.257	.886	.515	.143	.772	.401	.030	.658	.287
08	.628	.256	.884	.512	.140	.769	.397	.025	.653	.281
09	.628	.255	.883	.510	.138	.766	.393	.021	.648	.276
10	1.627	3.254	4.881	6.508	8.135	9.763	11.390	13.017	14.644	16.271
11	.627	.253	.880	.506	.133	.760	.386	.013	.639	.266
12	.626	.252	.878	.504	.130	.756	.382	.008	.634	.260
13	.625	.251	.876	.502	.127	.753	.378	.004	.629	.255
14	.625	.250	.875	.500	.125	.750	.375	.000	.625	.250
15	.624	.249	.873	.498	.122	.747	.371	12.996	.620	.245
16	.624	.248	.872	.496	.119	.743	.367	.991	.615	.239
17	.623	.247	.870	.494	.117	.740	.364	.987	.611	.234
18	.623	.246	.869	.492	.114	.737	.360	.983	.606	.229
19	.622	.245	.867	.489	.111	.734	.356	.978	.601	.223
20	1.622	3.243	4.865	6.487	8.108	9.730	11.352	12.974	14.595	16.217
21	.621	.242	.864	.485	.106	.727	.348	.970	.591	.212
22	.621	.241	.862	.483	.103	.724	.345	.966	.586	.207
23	.620	.240	.861	.481	.101	.721	.341	.962	.582	.202
24	.620	.239	.859	.478	.098	.718	.337	.957	.576	.196
25	.619	.238	.857	.476	.095	.715	.334	.953	.572	.191
26	.619	.237	.856	.474	.093	.712	.330	.949	.567	.186
27	.618	.236	.854	.472	.090	.709	.327	.945	.563	.181
28	.617	.235	.852	.470	.087	.705	.322	.940	.557	.175
29	.617	.234	.851	.468	.085	.702	.319	.936	.553	.170
30	1.616	3.233	4.849	6.466	8.082	9.699	11.315	12.932	14.548	16.165
31	.616	.232	.848	.464	.080	.696	.312	.928	.544	.160
32	.615	.231	.846	.462	.077	.692	.308	.923	.539	.154
33	.615	.230	.845	.460	.074	.689	.304	.919	.534	.149
34	.614	.229	.843	.458	.072	.686	.301	.915	.530	.144
35	.614	.228	.842	.456	.069	.683	.297	.911	.525	.139
36	.613	.227	.840	.453	.066	.680	.293	.906	.520	.133
37	.613	.226	.838	.451	.064	.677	.290	.902	.515	.128
38	.612	.225	.837	.449	.061	.674	.286	.898	.511	.123
39	.612	.223	.835	.447	.058	.670	.282	.894	.505	.117
40	1.611	3.222	4.833	6.444	8.055	9.667	11.278	12.889	14.500	16.111
41	.611	.221	.832	.442	.053	.664	.274	.885	.495	.106
42	.610	.220	.830	.440	.050	.661	.271	.881	.491	.101
43	.610	.219	.829	.438	.048	.658	.267	.877	.486	.096
44	.609	.218	.827	.436	.045	.654	.263	.872	.481	.090
45	.608	.217	.825	.434	.042	.651	.259	.868	.476	.085
46	.608	.216	.824	.432	.040	.648	.256	.864	.472	.080
47	.607	.215	.822	.430	.037	.645	.252	.860	.467	.075
48	.607	.214	.821	.428	.034	.641	.248	.855	.462	.069
49	.606	.213	.819	.426	.032	.638	.245	.851	.458	.064
50	1.606	3.212	4.818	6.424	8.029	9.635	11.241	12.847	14.453	16.059
51	.605	.211	.816	.422	.027	.632	.238	.843	.449	.054
52	.605	.210	.814	.419	.024	.629	.234	.838	.443	.048
53	.604	.209	.813	.417	.021	.626	.230	.834	.439	.043
54	.604	.208	.811	.415	.019	.623	.227	.830	.434	.038
55	.603	.207	.810	.413	.016	.620	.223	.826	.430	.033
56	.603	.206	.808	.411	.014	.617	.220	.822	.425	.028
57	.602	.205	.807	.409	.011	.614	.216	.818	.421	.023
58	.602	.204	.805	.407	.009	.611	.213	.814	.416	.018
59	.601	.202	.804	.405	.006	.607	.208	.810	.411	.012
60	1.600	3.201	4.801	6.402	8.002	9.603	11.203	12.804	14.404	16.005

Latitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.002
4	.003
5	.004
6	.006
7	.009
8	.011
9	.014
10	.018

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.432
2	4.864
3	7.296
4	9.728
5	12.160
6	14.592
7	17.024
8	19.456
9	21.888
10	24.320

TABLE XI.—*Co-ordinates for projection of maps. Scale $\frac{1}{30000}$.*

[Derivation of table explained in section (5); use of table explained on page 22.]

Latitude of parallel.	Abscissas of developed parallel.									
	1′ longitude.	2′ longitude.	3′ longitude.	4′ longitude.	5′ longitude.	6′ longitude.	7′ longitude.	8′ longitude.	9′ longitude.	10′ longitude.
° ′	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
49 00	1.600	3.201	4.801	6.402	8.002	9.603	11.203	12.804	14.404	16.005
01	.600	.200	.800	.400	.000	.600	.200	.800	.400	.000
02	.599	.199	.798	.398	7.997	.596	.196	.795	.395	15.994
03	.599	.198	.797	.396	.994	.593	.192	.791	.390	.989
04	.598	.197	.795	.394	.992	.590	.189	.787	.386	.984
05	.598	.196	.793	.391	.989	.587	.185	.782	.380	.978
06	.597	.195	.792	.389	.986	.584	.181	.778	.376	.973
07	.597	.194	.790	.387	.984	.581	.178	.774	.371	.968
08	.596	.192	.789	.385	.981	.577	.173	.770	.366	.962
09	.596	.191	.787	.383	.978	.574	.170	.766	.361	.957
10	1.595	3.190	4.786	6.381	7.976	9.571	11.166	12.762	14.357	15.952
11	.595	.189	.784	.378	.973	.568	.162	.757	.351	.946
12	.594	.188	.782	.376	.970	.564	.158	.752	.346	.940
13	.593	.187	.780	.374	.967	.561	.154	.748	.341	.935
14	.593	.186	.779	.372	.964	.557	.150	.743	.336	.929
15	.592	.185	.777	.370	.962	.554	.147	.739	.332	.924
16	.592	.184	.776	.368	.959	.551	.143	.735	.327	.919
17	.591	.183	.774	.365	.956	.548	.139	.730	.322	.913
18	.591	.182	.772	.363	.954	.545	.136	.726	.317	.908
19	.590	.181	.771	.361	.951	.542	.132	.722	.313	.903
20	1.590	3.179	4.769	6.359	7.948	9.538	11.128	12.718	14.307	15.897
21	.589	.179	.768	.357	.946	.536	.125	.714	.304	.893
22	.589	.178	.766	.355	.944	.533	.122	.710	.299	.888
23	.588	.176	.765	.353	.941	.529	.117	.706	.294	.882
24	.588	.175	.763	.351	.938	.526	.114	.702	.289	.877
25	.587	.174	.762	.349	.936	.523	.110	.698	.285	.872
26	.587	.173	.760	.346	.933	.520	.106	.693	.279	.866
27	.586	.172	.758	.344	.930	.517	.103	.689	.275	.861
28	.586	.171	.757	.342	.928	.514	.099	.685	.270	.856
29	.585	.170	.755	.340	.925	.510	.095	.680	.265	.850
30	1.584	3.169	4.753	6.338	7.922	9.507	11.091	12.676	14.260	15.845
31	.584	.168	.752	.336	.919	.503	.087	.671	.255	.839
32	.583	.167	.750	.333	.916	.500	.083	.666	.250	.833
33	.583	.166	.748	.331	.914	.497	.080	.662	.245	.828
34	.582	.165	.747	.329	.911	.494	.076	.658	.241	.823
35	.582	.163	.745	.327	.908	.490	.072	.654	.235	.817
36	.581	.162	.744	.325	.906	.487	.068	.650	.231	.812
37	.581	.161	.742	.323	.903	.484	.065	.646	.226	.807
38	.580	.160	.740	.320	.900	.481	.061	.641	.221	.801
39	.580	.159	.739	.318	.898	.478	.057	.637	.216	.796
40	1.579	3.158	4.737	6.316	7.895	9.475	11.054	12.633	14.212	15.791
41	.578	.157	.735	.314	.892	.471	.049	.628	.206	.785
42	.578	.156	.734	.312	.890	.468	.046	.624	.202	.780
43	.577	.155	.732	.310	.887	.465	.042	.620	.197	.775
44	.577	.154	.731	.308	.884	.461	.038	.615	.192	.769
45	.576	.153	.729	.306	.882	.458	.035	.611	.188	.764
46	.576	.152	.728	.304	.879	.455	.031	.607	.183	.759
47	.575	.151	.726	.301	.876	.452	.027	.602	.178	.753
48	.575	.150	.724	.299	.874	.449	.024	.598	.173	.748
49	.574	.149	.723	.297	.871	.446	.020	.594	.169	.743
50	1.574	3.147	4.721	6.295	7.868	9.442	11.016	12.590	14.163	15.737
51	.573	.146	.719	.292	.865	.439	.012	.585	.158	.731
52	.573	.145	.718	.290	.863	.436	.008	.581	.153	.726
53	.572	.144	.716	.288	.860	.432	.004	.576	.148	.720
54	.571	.143	.714	.286	.857	.429	.000	.572	.143	.715
55	.571	.142	.713	.284	.855	.426	10.997	.568	.139	.710
56	.570	.141	.711	.282	.852	.422	.993	.563	.134	.704
57	.570	.140	.710	.280	.849	.419	.989	.559	.129	.699
58	.569	.139	.708	.278	.847	.416	.986	.555	.125	.694
59	.569	.138	.706	.275	.844	.413	.982	.550	.119	.688
60	1.568	3.136	4.705	6.273	7.841	9.409	10.977	12.546	14.114	15.682

Longitude interval.	Ordinates of developed parallel.
′	*Inches.*
1	0.000
2	.001
3	.002
4	.003
5	.004
6	.006
7	.009
8	.011
9	.014
10	.018

Latitude interval.	Meridional distances.
′	*Inches.*
1	2.432
2	4.865
3	7.297
4	9.730
5	12.162
6	14.594
7	17.027
8	19.459
9	21.892
10	24.324

TABLE XII.—*Areas of quadrilaterals of Earth's surface of 1° extent in latitude and longitude.*

[Derivation of table explained in section (6); use of table explained on page 23.]

Middle latitude of quadrilateral.		Area in square miles.	Middle latitude of quadrilateral.		Area in square miles.
°	′		°	′	
0	00	4752.33	22	30	4399.30
0	30	52.16	23	00	83.60
1	00	51.63	23	30	67.57
1	30	50.75	24	00	51.21
2	00	49.52	24	30	34.52
2	30	47.93	25	00	17.51
3	00	46.00	25	30	00.17
3	30	43.71	26	00	4282.50
4	00	41.07	26	30	64.51
4	30	38.08	27	00	46.20
5	00	34.74	27	30	27.56
5	30	31.04	28	00	08.61
6	00	27.00	28	30	4189.33
6	30	22.61	29	00	69.74
7	00	17.86	29	30	49.83
7	30	12.76	30	00	29.60
8	00	07.32	30	30	09.06
8	30	01.52	31	00	4088.21
9	00	4695.38	31	30	67.05
9	30	88.89	32	00	45.57
10	00	82.05	32	30	23.79
10	30	74.86	33	00	01.69
11	00	67.32	33	30	3979.30
11	30	59.43	34	00	56.59
12	00	51.20	34	30	33.59
12	30	42.63	35	00	10.28
13	00	33.71	35	30	3886.67
13	30	24.44	36	00	62.76
14	00	14.82	36	30	38.56
14	30	04.87	37	00	14.06
15	00	4594.57	37	30	3789.26
15	30	83.92	38	00	64.18
16	00	72.94	38	30	38.80
16	30	61.61	39	00	13.14
17	00	49.94	39	30	3687.18
17	30	37.93	40	00	60.95
18	00	25.59	40	30	34.42
18	30	12.90	41	00	07.62
19	00	4499.87	41	30	3580.54
19	30	86.51	42	00	53.17
20	00	72.81	42	30	25.54
20	30	58.78	43	00	3497.62
21	00	44.41	43	30	69.44
21	30	29.71	44	00	40.98
22	00	14.67	44	30	12.26
22	30	4399.30	45	00	3383.27

TABLE XII.—*Areas of quadrilaterals of Earth's surface of 1° extent in latitude and longitude.*

[Derivation of table explained in section (6); use of table explained on page 23.]

Middle latitude of quadrilateral.		Area in square miles.	Middle latitude of quadrilateral.		Area in square miles.
°	′		°	′	
45	00	3383.27	67	30	1839.84
45	30	54.01	68	00	01.16
46	00	24.49	68	30	1762.33
46	30	3294.71	69	00	23.36
47	00	64.68	69	30	1684.24
47	30	34.39	70	00	45.00
48	00	03.84	70	30	05.62
48	30	3173.04	71	00	1566.10
49	00	41.99	71	30	26.46
49	30	10.69	72	00	1486.70
50	00	3079.15	72	30	46.81
50	30	47.37	73	00	06.81
51	00	15.34	73	30	1366.69
51	30	2983.08	74	00	26.46
52	00	50.58	74	30	1286.12
52	30	17.85	75	00	45.68
53	00	2884.88	75	30	05.13
53	30	51.68	76	00	1164.49
54	00	18.27	76	30	23.75
54	30	2784.62	77	00	1082.91
55	00	50.76	77	30	41.99
55	30	16.67	78	00	00.99
56	00	2682.37	78	30	959.90
56	30	47.85	79	00	18.73
57	00	13.13	79	30	877.49
57	30	2578.19	80	00	36.18
58	00	43.05	80	30	794.79
58	30	07.70	81	00	53.34
59	00	2472.16	81	30	11.83
59	30	36.42	82	00	670.27
60	00	00.48	82	30	28.64
60	30	2364.34	83	00	586.97
61	00	28.02	83	30	45.24
61	30	2291.51	84	00	03.47
62	00	54.82	84	30	461.66
62	30	17.94	85	00	19.81
63	00	2180.89	85	30	377.93
63	30	43.66	86	00	36.02
64	00	06.26	86	30	294.08
64	30	2068.68	87	00	52.11
65	00	30.94	87	30	10.12
65	30	1993.04	88	00	168.12
66	00	54.97	88	30	126.10
66	30	16.75	89	00	84.07
67	00	1878.37	89	30	42.04
67	30	39.84	90	00	00.00

TABLE XIII.—*Areas of quadrilaterals of Earth's surface of 30′ extent in latitude and longitude.*

[Derivation of table explained in section (6); use of table explained on page 23.]

Middle latitude of quadrilateral.	Area in square miles.	Middle latitude of quadrilateral.	Area in square miles.
° ′		° ′	
0 15	1188.08	22 45	1097.88
0 45	1188.00	23 15	1093.92
1 15	1187.82	23 45	1089.87
1 45	1187.56	24 15	1085.74
2 15	1187.20	24 45	1081.52
2 45	1186.76	25 15	1077.23
3 15	1186.24	25 45	1072.85
3 45	1185.62	26 15	1068.40
4 15	1184.92	26 45	1063.86
4 45	1184.13	27 15	1059.24
5 15	1183.24	27 45	1054.54
5 45	1182.28	28 15	1049.76
6 15	1181.22	28 45	1044.90
6 45	1180.08	29 15	1039.97
7 15	1178.85	29 45	1034.95
7 45	1177.53	30 15	1029.85
8 15	1176.13	30 45	1024.68
8 45	1174.63	31 15	1019.43
9 15	1173.06	31 45	1014.10
9 45	1171.39	32 15	1008.69
10 15	1169.63	32 45	1003.20
10 45	1167.80	33 15	997.64
11 15	1165.86	33 45	992.00
11 45	1163.85	34 15	986.29
12 15	1161.75	34 45	980.50
12 45	1159.56	35 15	974.64
13 15	1157.29	35 45	968.70
13 45	1154.93	36 15	962.68
14 15	1152.48	36 45	956.60
14 45	1149.95	37 15	950.43
15 15	1147.33	37 45	944.21
15 45	1144.63	38 15	937.88
16 15	1141.84	38 45	931.51
16 45	1138.96	39 15	925.06
17 15	1136.00	39 45	918.53
17 45	1132.96	40 15	911.94
18 15	1129.83	40 45	905.27
18 45	1126.62	41 15	898.54
19 15	1123.32	41 45	891.73
19 45	1119.93	42 15	884.85
20 15	1116.47	42 45	877.91
20 45	1112.92	43 15	870.90
21 15	1109.28	43 45	863.82
21 45	1105.57	44 15	856.67
22 15	1101.77	44 45	849.46
22 45	1097.88	45 15	842.18

TABLE XIII.—*Areas of quadrilaterals of Earth's surface of 30′ extent in latitude and longitude.*

[Derivation of table explained in section (6); use of table explained on page 23.]

Middle latitude of quadrilateral.	Area in square miles.	Middle latitude of quadrilateral.	Area in square miles.
° ′		° ′	
45 45	834.83	67 45	455.13
46 15	827.42	68 15	445.45
46 45	819.94	68 45	435.72
47 15	812.40	69 15	425.96
47 45	804.79	69 45	416.16
48 15	797.13	70 15	406.34
48 45	789.39	70 45	396.47
49 15	781.60	71 15	386.58
49 45	773.74	71 45	376.65
50 15	765.83	72 15	366.70
50 45	757.85	72 45	356.71
51 15	749.82	73 15	346.69
51 45	741.72	73 45	336.65
52 15	733.57	74 15	326.58
52 45	725.36	74 45	316.48
53 15	717.08	75 15	306.36
53 45	708.76	75 45	296.21
54 15	700.38	76 15	286.04
54 45	691.94	76 45	275.84
55 15	683.44	77 15	265.62
55 45	674.89	77 45	255.38
56 15	666.29	78 15	245.12
56 45	657.64	78 45	234.83
57 15	648.93	79 15	224.53
57 45	640.17	79 45	214.21
58 15	631.36	80 15	203.88
58 45	622.49	80 45	193.52
59 15	613.59	81 15	183.15
59 45	604.62	81 45	172.77
60 15	595.62	82 15	162.37
60 45	586.56	82 45	151.95
61 15	577.45	83 15	141.53
61 45	568.30	83 45	131.09
62 15	559.11	84 15	120.64
62 45	549.86	84 45	110.18
63 15	540.58	85 15	99.72
63 45	531.25	85 45	89.25
64 15	521.88	86 15	78.76
64 45	512.46	86 45	68.27
65 15	503.01	87 15	57.78
65 45	493.51	87 45	47.28
66 15	483.97	88 15	36.78
66 45	474.40	88 45	26.27
67 15	464.78	89 15	15.76
67 45	455.13	89 45	5.26

TABLE XIII.—*Areas of quadrilaterals of Earth's surface of 30′ extent in latitude and longitude.*

[Derivation of table explained in section (6); use of table explained on page 23.]

Middle latitude of quadrilateral.	Area in square miles.	Middle latitude of quadrilateral.	Area in square miles.
° ′		° ′	
0 30	1188.05	23 00	1095.91
1 00	1187.92	23 30	1091.90
1 30	1187.70	24 00	1087.81
2 00	1187.39	24 30	1083.64
2 30	1186.99	25 00	1079.39
3 00	1186.51	25 30	1075.05
3 30	1185.95	26 00	1070.64
4 00	1185.28	26 30	1066.14
4 30	1184.53	27 00	1061.56
5 00	1183.70	27 30	1056.90
5 30	1182.77	28 00	1052.16
6 00	1181.76	28 30	1047.34
6 30	1180.66	29 00	1042.44
7 00	1179.48	29 30	1037.47
7 30	1178.20	30 00	1032.41
8 00	1176.84	30 30	1027.27
8 30	1175.39	31 00	1022.06
9 00	1173.86	31 30	1016.77
9 30	1172.23	32 00	1011.40
10 00	1170.52	32 30	1005.96
10 30	1168.73	33 00	1000.43
11 00	1166.84	33 30	994.83
11 30	1164.86	34 00	989.16
12 00	1162.81	34 30	983.41
12 30	1160.67	35 00	977.58
13 00	1158.44	35 30	971.68
13 30	1156.12	36 00	965.70
14 00	1153.72	36 30	959.65
14 30	1151.23	37 00	953.52
15 00	1148.65	37 30	947.32
15 00	1145.99	38 00	941.05
16 00	1143.25	38 30	934.71
16 30	1140.41	39 00	928.29
17 00	1137.50	39 30	921.80
17 30	1134.49	40 00	915.25
18 00	1131.41	40 30	908.61
18 30	1128.24	41 00	901.91
19 00	1124.98	41 30	895.14
19 30	1121.64	42 00	888.30
20 00	1118.21	42 30	881.39
20 30	1114.71	43 00	874.41
21 00	1111.11	43 30	867.37
21 30	1107.44	44 00	860.25
22 00	1103.68	44 30	853.07
22 30	1099.84	45 00	845.82

TABLE XIII.—*Areas of quadrilaterals of Earth's surface of 30′ extent in latitude and longitude.*

[Derivation of table explained in section (6); use of table explained on page 23.]

Middle latitude of quadrilateral.		Area in square miles.	Middle latitude of quadrilateral.		Area in square miles.
°	′		°	′	
45	30	838.51	68	00	450.29
46	00	831.13	68	30	440.59
46	30	823.68	69	00	430.84
47	00	816.18	69	30	421.06
47	30	808.60	70	00	411.25
48	00	800.97	70	30	401.41
48	30	793.27	71	00	391.53
49	00	785.50	71	30	381.62
49	30	777.68	72	00	371.68
50	00	769.79	72	30	361.71
50	30	761.85	73	00	351.71
51	00	753.84	73	30	341.68
51	30	745.78	74	00	331.62
52	00	737.65	74	30	321.53
52	30	729.47	75	00	311.42
53	00	721.23	75	30	301.28
53	30	712.93	76	00	291.12
54	00	704.57	76	30	280.94
54	30	696.16	77	00	270.73
55	00	687.70	77	30	260.50
55	30	679.17	78	00	250.25
56	00	670.60	78	30	239.98
56	30	661.97	79	00	229.68
57	00	653.29	79	30	219.37
57	30	644.55	80	00	209.05
58	00	635.77	80	30	198.70
58	30	626.93	81	00	188.34
59	00	618.05	81	30	177.96
59	30	609.11	82	00	167.57
60	00	600.13	82	30	157.16
60	30	591.09	83	00	146.74
61	00	582.01	83	30	136.31
61	30	572.88	84	00	125.87
62	00	563.71	84	30	115.42
62	30	554.49	85	00	104.95
63	00	545.23	85	30	94.48
63	30	535.92	86	00	84.01
64	00	526.57	86	30	73.52
64	30	517.17	87	00	63.03
65	00	507.74	87	30	52.53
65	30	498.26	88	00	42.03
66	00	488.75	88	30	31.53
66	30	479.19	89	00	21.02
67	00	469.60	89	30	10.51
67	30	459.96	90	00	00.00

TABLE XIV.—*Areas of quadrilaterals of Earth's surface of* 15′ *extent in latitude and longitude.*

[Derivation of table explained in section (6) use of table explained on page 23.]

Middle latitude of quadrilateral.	Area in square miles.	Middle latitude of quadrilateral.	Area in square miles.
° ′ ″		° ′ ″	
0 07 30	297.02	5 45 00	295.57
0 15 00	297.02	5 52 30	295.51
0 22 30	297.02	6 00 00	295.44
0 30 00	297.01	6 07 30	295.37
0 37 30	297.01	6 15 00	295.31
0 45 00	297.00	6 22 30	295.24
0 52 30	296.99	6 30 00	295.17
1 00 00	296.98	6 37 30	295.09
1 07 30	296.97	6 45 00	295.02
1 15 00	296.96	6 52 30	294.95
1 22 30	296.94	7 00 00	294.87
1 30 00	296.93	7 07 30	294.79
1 37 30	296.91	7 15 00	294.71
1 45 00	296.89	7 22 30	294.63
1 52 30	296.87	7 30 00	294.55
2 00 00	296.85	7 37 30	294.47
2 07 30	296.82	7 45 00	294.39
2 15 00	296.80	7 52 30	294.30
2 22 30	296.77	8 00 00	294.21
2 30 00	296.75	8 07 30	294.12
2 37 30	296.72	8 15 00	294.03
2 45 00	296.69	8 22 30	293.94
2 52 30	296.66	8 30 00	293.85
3 00 00	296.63	8 37 30	293.75
3 07 30	296.60	8 45 00	293.66
3 15 00	296.56	8 52 30	293.56
3 22 30	296.53	9 00 00	293.47
3 30 00	296.49	9 07 30	293.37
3 37 30	296.45	9 15 00	293.27
3 45 00	296.41	9 22 30	293.16
3 52 30	296.36	9 30 00	293.06
4 00 00	296.32	9 37 30	292.95
4 07 30	296.28	9 45 00	292.85
4 15 00	296.23	9 52 30	292.74
4 22 30	296.18	10 00 00	292.63
4 30 00	296.13	10 07 30	292.52
4 37 30	296.08	10 15 00	292.41
4 45 00	296.03	10 22 30	292.30
4 52 30	295.98	10 30 00	292.19
5 00 00	295.93	10 37 30	292.07
5 07 30	295.87	10 45 00	291.95
5 15 00	295.81	10 52 30	291.83
5 22 30	295.75	11 00 00	291.71
5 30 00	295.69	11 07 30	291.59
5 37 30	295.63	11 15 00	291.47

TABLE XIV.—*Areas of quadrilaterals of earth's surface of 15′ extent in latitude and longitude.*

[Derivation of table explained in section (6); use of table explained on page 23.]

Middle latitude of quadrilateral.			Area in square miles.	Middle latitude of quadrilateral.			Area in square miles.
°	′	″		°	′	″	
11	22	30	291.34	17	00	00	284.38
11	30	00	291.22	17	07	30	284.19
11	37	30	291.09	17	15	00	284.00
11	45	00	290.96	17	22	30	283.81
11	52	30	290.83	17	30	00	283.62
12	00	00	290.70	17	37	30	283.43
12	70	30	290.57	17	45	00	283.24
12	15	00	290.44	17	52	30	283.05
12	22	30	290.30	18	00	00	282.86
12	30	00	290.17	18	07	30	282.66
12	37	30	290.03	18	15	00	282.46
12	45	00	289.89	18	22	30	282.26
12	52	30	289.75	18	30	00	282.06
13	00	00	289.61	18	37	30	281.86
13	07	30	289.47	18	45	00	281.66
13	15	00	289.33	18	52	30	281.45
13	22	30	289.18	19	00	00	281.25
13	30	00	289.03	19	07	30	281.04
13	37	30	288.88	19	15	00	280.83
13	45	00	288.73	19	22	30	280.62
13	52	30	288.58	19	30	00	280.41
14	00	00	288.43	19	37	30	280.20
14	07	30	288.28	19	45	00	279.99
14	15	00	288.12	19	52	30	279.77
14	22	30	287.96	20	00	00	279.55
14	30	00	287.81	20	07	30	279.34
14	37	30	287.65	20	15	00	279.12
14	45	00	287.49	20	22	30	278.90
14	52	30	287.33	20	30	00	278.68
15	00	00	287.17	20	37	30	278.46
15	07	30	287.00	20	45	00	278.23
15	15	00	286.83	20	52	30	278.00
15	22	30	286.67	21	00	00	277.78
15	30	00	286.50	21	07	30	277.55
15	37	30	286.33	21	15	00	277.32
15	45	00	286.16	21	22	30	277.09
15	52	30	285.99	21	30	00	276.86
16	00	00	285.82	21	37	30	276.63
16	07	30	285.64	21	45	00	276.39
16	15	00	285.46	21	52	30	276.16
16	22	30	285.28	22	00	00	275.92
16	30	00	285.10	22	07	30	275.68
16	37	30	284.92	22	15	00	275.44
16	45	00	284.74	22	22	30	275.20
16	52	30	284.56	22	30	00	274.96

TABLE XIV.—*Areas of quadrilaterals of Earth's surface of* 15′ *extent in latitude and longitude.*

[Derivation of table explained in section (6); use of table explained on page 23.]

Middle latitude of quadrilateral.			Area in square miles.	Middle latitude of quadrilateral.			Area in square miles.
°	′	″		°	′	″	
22	37	30	274.72	28	15	00	262.44
22	45	00	274.47	28	22	30	262.14
22	52	30	274.22	28	30	00	261.84
23	00	00	273.98	28	37	30	261.53
23	07	30	273.73	28	45	00	261.23
23	15	00	273.48	28	52	30	260.92
23	22	30	273.23	29	00	00	260.61
23	30	00	272.98	29	07	30	260.30
23	37	30	272.72	29	15	00	259.99
23	45	00	272.47	29	22	30	259.68
23	52	30	272.21	29	30	00	259.37
24	00	00	271.95	29	37	30	259.05
24	07	30	271.69	29	45	00	258.74
24	15	00	271.44	29	52	30	258.42
24	22	30	271.17	30	00	00	258.10
24	30	00	270.91	30	07	30	257.78
24	37	30	270.65	30	15	00	257.46
24	45	00	270.38	30	22	30	257.14
24	52	30	270.11	30	30	00	256.82
25	00	00	269.85	30	37	30	256.49
25	07	30	269.58	30	45	00	256.17
25	15	00	269.31	30	52	30	255.84
25	22	30	269.04	31	00	00	255.52
25	30	00	268.76	31	07	30	255.19
25	37	30	268.49	31	15	00	254.86
25	45	00	268.21	31	22	30	254.53
25	52	30	267.94	31	30	00	254.19
26	00	00	267.66	31	37	30	253.86
26	07	30	267.38	31	45	00	253.53
26	15	00	267.10	31	52	30	253.19
26	22	30	266.82	32	00	00	252.85
26	30	00	266.54	32	07	30	252.51
26	37	30	266.25	32	15	00	252.17
26	45	00	265.97	32	22	30	251.83
26	52	30	265.68	32	30	00	251.49
27	00	00	265.39	32	37	30	251.15
27	07	30	265.10	32	45	00	250.80
27	15	00	264.81	32	52	30	250.45
27	22	30	264.52	33	00	00	250.11
27	30	00	264.23	33	07	30	249.76
27	37	30	263.93	33	15	00	249.41
27	45	00	263.64	33	22	30	249.06
27	52	30	263.34	33	30	00	248.71
28	00	00	263.04	33	37	30	248.36
28	07	30	262.74	33	45	00	248.00

TABLE XIV.—*Areas of quadrilaterals of Earth's surface of 15′ extent in latitude and longitude.*

[Derivation of table explained in section (6); use of table explained on page 23.]

Middle latitude of quadrilateral.			Area in square miles.	Middle latitude of quadrilateral.			Area in square miles.
°	′	″		°	′	″	
33	52	30	247.65	39	30	00	230.45
34	00	00	247.29	39	37	30	230.04
34	07	30	246.93	39	45	00	229.63
34	15	00	246.57	39	52	30	229.22
34	22	30	246.21	40	00	00	228.81
34	30	00	245.85	40	07	30	228.40
34	37	30	245.49	40	15	00	227.99
34	45	00	245.13	40	22	30	227.57
34	52	30	244.76	40	30	00	227.15
35	00	00	244.40	40	37	30	226.73
35	07	30	244.03	40	45	00	226.32
35	15	00	243.66	40	52	30	225.90
35	22	30	243.29	41	00	00	225.48
35	30	00	242.92	41	07	30	225.06
35	37	30	242.55	41	15	00	224.64
35	45	00	242.18	41	22	30	224.21
35	52	30	241.80	41	30	00	223.79
36	00	00	241.43	41	37	30	223.36
36	07	30	241.05	41	45	00	222.93
36	15	00	240.67	41	52	30	222.50
36	22	30	240.29	42	00	00	222.08
36	30	00	239.91	42	07	30	221.65
36	37	30	239.53	42	15	00	221.21
36	45	00	239.15	42	22	30	220.78
36	52	30	238.77	42	30	00	220.35
37	00	00	238.38	42	37	30	219.91
37	07	30	237.99	42	45	00	219.48
37	15	00	237.61	42	52	30	219.04
37	22	30	237.22	43	00	00	218.60
37	30	00	236.83	43	07	30	218.16
37	37	30	236.44	43	15	00	217.73
37	45	00	236.05	43	22	30	217.28
37	52	30	235.66	43	30	00	216.84
38	00	00	235.26	43	37	30	216.40
38	07	30	234.87	43	45	00	215.96
38	15	00	234.47	43	52	30	215.51
38	22	30	234.07	44	00	00	215.06
38	30	00	233.68	44	07	30	214.61
38	37	30	233.28	44	15	00	214.17
38	45	00	232.88	44	22	30	213.72
38	52	30	232.48	44	30	00	213.27
39	00	00	232.07	44	37	30	212.82
39	07	30	231.67	44	45	00	212.37
39	15	00	231.27	44	52	30	211.91
39	22	30	230.86	45	00	00	211.46

TABLE XIV.—*Areas of quadrilaterals of Earth's surface of 15′ extent in latitude and longitude.*

[Derivation of table explained in section (6); use of table explained on page 23.]

Middle latitude of quadrilateral.			Area in square miles.	Middle latitude of quadrilateral.			Area in square miles.
°	′	″		°	′	″	
45	07	30	211.00	50	45	00	189.46
45	15	00	210.55	50	52	30	188.96
45	22	30	210.09	51	00	00	188.46
45	30	00	209.63	51	07	30	187.96
45	37	30	209.17	51	15	00	187.46
45	45	00	208.71	51	22	30	186.95
45	52	30	208.25	51	30	00	186.45
46	00	00	207.78	51	37	30	185.94
46	07	30	207.32	51	45	00	185.43
46	15	00	206.86	51	52	30	184.92
46	22	30	206.39	52	00	00	184.41
46	30	00	205.92	52	07	30	183.90
46	37	30	205.45	52	15	00	183.39
46	45	00	204.99	52	22	30	182.88
46	52	30	204 52	52	30	00	182.37
47	00	00	204.05	52	37	30	181.85
47	07	30	203.57	52	45	00	181.34
47	15	00	203.10	52	52	30	180.82
47	22	30	202.63	53	00	00	180.31
47	30	00	202.15	53	07	30	179.79
47	37	30	201.67	53	15	00	179.27
47	45	00	201.20	53	22	30	178.75
47	52	30	200.72	53	30	00	178.23
48	00	00	200.24	53	37	30	177.71
48	07	30	199.76	53	45	00	177.19
48	15	00	199.28	53	52	30	176.67
48	22	30	198.80	54	00	00	176.14
48	30	00	198.32	54	07	30	175.62
48	37	30	197.83	54	15	00	175.10
48	45	00	197.35	54	22	30	174.57
48	52	30	196.86	54	30	00	174.04
49	00	00	196.38	54	37	30	173.51
49	07	30	195.89	54	45	00	172.99
49	15	00	195.40	54	52	30	172.46
49	22	30	194.91	55	00	00	171.93
49	30	00	194.42	55	07	30	171.39
49	37	30	193.93	55	15	00	170.86
49	45	00	193.44	55	22	30	170.33
49	52	30	192.94	55	30	00	169.79
50	00	00	192.45	55	37	30	169.26
50	07	30	191.95	55	45	00	168.72
50	15	00	191.46	55	52	30	168.19
50	22	30	190.96	56	00	00	167.65
50	30	00	190.46	56	07	30	167.11
50	37	30	189.96	56	15	00	166.57

TABLE XIV.—*Areas of quadrilaterals of Earth's surface of 15′ extent in latitude and longitude.*

[Derivation of table explained in section (6); use of table explained on page 23.]

Middle latitude of quadrilateral.			Area in square miles.	Middle latitude of quadrilateral.			Area in square miles.
°	′	″		°	′	″	
56	22	30	166.03	62	00	00	140.93
56	30	00	165.49	62	07	30	140.35
56	37	30	164.95	62	15	00	139.78
56	45	00	164.41	62	22	30	139.20
56	52	30	163.87	62	30	00	138.62
57	00	00	163.32	62	37	30	138.04
57	07	30	162.78	62	45	00	137.47
57	15	00	162.23	62	52	30	136.89
57	22	30	161.68	63	00	00	136.31
57	30	00	161.14	63	07	30	135.73
57	37	30	160.59	63	15	00	135.15
57	45	00	160.04	63	22	30	134.56
57	52	30	159.49	63	30	00	133.98
58	00	00	158.94	63	37	30	133.40
58	07	30	158.39	63	45	00	132.81
58	15	00	157.84	63	52	30	132.23
58	22	30	157.29	64	00	00	131.64
58	30	00	156.73	64	07	30	131.06
58	37	30	156.18	64	15	00	130.47
58	45	00	155.62	64	22	30	129.88
58	52	30	155.07	64	30	00	129.29
59	00	00	154.51	64	37	30	128.70
59	07	30	153.96	64	45	00	128.12
59	15	00	153.40	64	52	30	127.53
59	22	30	152.84	65	00	00	126.94
59	30	00	152.28	65	07	30	126.34
59	37	30	151.72	65	15	00	125.75
59	45	00	151.16	65	22	30	125.16
59	52	30	150.60	65	30	00	124.57
60	00	00	150.03	65	37	30	123.97
60	07	30	149.47	65	45	00	123.38
60	15	00	148.91	65	52	30	122.78
60	22	30	148.34	66	00	00	122.19
60	30	00	147.77	66	07	30	121.59
60	37	30	147.21	66	15	00	120.99
60	45	00	146.64	66	22	30	120.40
60	52	30	146.07	66	30	00	119.80
61	00	00	145.50	66	37	30	119.20
61	07	30	144.93	66	45	00	118.60
61	15	00	144.36	66	52	30	118.00
61	22	30	143.79	67	00	00	117.40
61	30	00	143.22	67	07	30	116.80
61	37	30	142.65	67	15	00	116.20
61	45	00	142.08	67	22	30	115.50
61	52	30	141.50	67	30	00	114.99

TABLE XIV.—*Areas of quadrilaterals of Earth's surface of 15′ extent in latitude and longitude.*

[Derivation of table explained in section (6); use of table explained on page 23.]

Middle latitude of quadrilateral.			Area in square miles.	Middle latitude of quadrilateral.			Area in square miles.
°	′	″		°	′	″	
67	37	30	114.39	73	15	00	86.67
67	45	00	113.78	73	22	30	86.05
67	52	30	113.18	73	30	00	85.42
68	00	00	112.57	73	37	30	84.79
68	07	30	111.97	73	45	00	84.16
68	15	00	111.36	73	52	30	83.53
68	22	30	110.76	74	00	00	82.91
68	30	00	110.15	74	07	30	82.28
68	37	30	109.54	74	15	00	81.65
68	45	00	108.93	74	22	30	81.01
68	52	30	108.32	74	30	00	80.38
69	00	00	107.71	74	37	30	79.75
69	07	30	107.10	74	45	00	79.12
69	15	00	106.49	74	52	30	78.49
69	22	30	105.88	75	00	00	77.86
69	30	00	105.27	75	07	30	77.22
69	37	30	104.65	75	15	00	76.59
69	45	00	104.04	75	22	30	75.95
69	52	30	103.43	75	30	00	75.32
70	00	00	102.81	75	37	30	74.69
70	07	30	102.20	75	45	00	74.05
70	15	00	101.59	75	52	30	73.42
70	22	30	100.97	76	00	00	72.78
70	30	00	100.35	76	07	30	72.14
70	37	30	99.74	76	15	00	71.51
70	45	00	99.12	76	22	30	70.87
70	52	30	98.50	76	30	00	70.24
71	00	00	97.88	76	37	30	69.60
71	07	30	97.26	76	45	00	68.96
71	15	00	96.65	76	52	30	68.32
71	22	30	96.03	77	00	00	67.68
71	30	00	95.41	77	07	30	67.04
71	37	30	94.78	77	15	00	66.41
71	45	00	94.16	77	22	30	65.77
71	52	30	93.54	77	30	00	65.13
72	00	00	92.92	77	37	30	64.49
72	07	30	92.30	77	45	00	63.85
72	15	00	91.68	77	52	30	63.20
72	22	30	91.05	78	00	00	62.56
72	30	00	90.43	78	07	30	61.92
72	37	30	89.80	78	15	00	61.28
72	45	00	89.18	78	22	30	60.64
72	52	30	88.55	78	30	00	60.00
73	00	00	87.93	78	37	30	59.35
73	07	30	87.30	78	45	00	58.71

TABLE XIV.—*Areas of quadrilaterals of Earth's surface of 15′ extent in latitude and longitude.*

[Derivation of table explained in section (6); use of table explained on page 23.]

Middle latitude of quadrilateral.			Area in square miles.	Middle latitude of quadrilateral.			Area in square miles.
°	′	″		°	′	″	
78	52	30	58.06	84	30	00	28.86
79	00	00	57.42	84	37	30	28.20
79	07	30	56.78	84	45	00	27.54
79	15	00	56.13	84	52	30	26.89
79	22	30	55.49	85	00	00	26.24
79	30	00	54.84	85	07	30	25.58
79	37	30	54.20	85	15	00	24.93
79	45	00	53.55	85	22	30	24.27
79	52	30	52.91	85	30	00	23.62
80	00	00	52.26	85	37	30	22.97
80	07	30	51.62	85	45	00	22.31
80	15	00	50.97	85	52	30	21.66
80	22	30	50.32	86	00	00	21.00
80	30	00	49.68	86	07	30	20.35
80	37	30	49.03	86	15	00	19.69
80	45	00	48.38	86	22	30	19.04
80	52	30	47.73	86	30	00	18.38
81	00	00	47.08	86	37	30	17.72
81	07	30	46.44	86	45	00	17.07
81	15	00	45.79	86	52	30	16.41
81	22	30	45.14	87	00	00	15.76
81	30	00	44.49	87	07	30	15.10
81	37	30	43.84	87	15	00	14.44
81	45	00	43.19	87	22	30	13.79
81	52	30	42.54	87	30	00	13.13
82	00	00	41.89	87	37	30	12.48
82	07	30	41.24	87	45	00	11.82
82	15	00	40.59	87	52	30	11.16
82	22	30	39.94	88	00	00	10.51
82	30	00	39.29	88	07	30	9.85
82	37	30	38.64	88	15	00	9.20
82	45	00	37.99	88	22	30	8.54
82	52	30	37.34	88	30	00	7.88
83	00	00	36.69	88	37	30	7.22
83	07	30	36.03	88	45	00	6.57
83	15	00	35.38	88	52	30	5.91
83	22	30	34.73	89	00	00	5.26
83	30	00	34.08	89	07	30	4.60
83	37	30	33.42	89	15	00	3.94
83	45	00	32.77	89	22	30	3.28
83	52	30	32.12	89	30	00	2.63
84	00	00	31.47	89	37	30	1.97
84	07	30	30.81	89	45	00	1.31
84	15	00	30.16	89	52	30	0.66
84	22	30	29.51				

TABLE XV.—*Areas of quadrilaterals of Earth's surface of 10′ extent in latitude and longitude.*

[Derivation of table explained in section (6); use of table explained on page 23.]

Middle latitude of quadrilateral.	Area in square miles.	Middle latitude of quadrilateral.	Area in square miles.
° ′		° ′	
0 05	132.01	7 35	130.88
0 15	132.01	7 45	130.84
0 25	132.01	7 55	130.79
0 35	132.00	8 05	130.73
0 45	132.00	8 15	130.68
0 55	131.99	8 25	130.63
1 05	131.99	8 35	130.57
1 15	131.98	8 45	130.51
1 25	131.97	8 55	130.46
1 35	131.96	9 05	130.40
1 45	131.95	9 15	130.34
1 55	131.94	9 25	130.28
2 05	131.93	9 35	130.22
2 15	131.91	9 45	130.15
2 25	131.90	9 55	130.09
2 35	131.88	10 05	130.02
2 45	131.86	10 15	129.96
2 55	131.84	10 25	129.89
3 05	131.82	10 35	129.82
3 15	131.80	10 45	129.76
3 25	131.78	10 55	129.68
3 35	131.76	11 05	129.61
3 45	131.74	11 15	129.54
3 55	131.71	11 25	129.47
4 05	131.68	11 35	129.39
4 15	131.66	11 45	129.32
4 25	131.63	11 55	129.24
4 35	131.60	12 05	129.16
4 45	131.57	12 15	129.08
4 55	131.54	12 25	129.00
5 05	131.50	12 35	128.92
5 15	131.47	12 45	128.84
5 25	131.44	12 55	128.76
5 35	131.40	13 05	128.67
5 45	131.36	13 15	128.59
5 55	131.33	13 25	128.50
6 05	131.29	13 35	128.41
6 15	131.25	13 45	128.33
6 25	131.21	13 55	128.24
6 35	131.16	14 05	128.14
6 45	131.12	14 15	128.05
6 55	131.07	14 25	127.96
7 05	131.03	14 35	127.87
7 15	130.98	14 45	127.77
7 25	130.93	14 55	127.67

TABLE XV.—*Areas of quadrilaterals of Earth's surface of 10′ extent in latitude and longitude.*

[Derivation of table explained in section (6); use of table explained on page 23.]

Middle latitude of quadrilateral.	Area in square miles.	Middle latitude of quadrilateral.	Area in square miles.
° ′		° ′	
15 05	127.58	22 35	122.13
15 15	127.48	22 45	121.99
15 25	127.38	22 55	121.84
15 35	127.28	23 05	121.69
15 45	127.18	23 15	121.55
15 55	127.08	23 25	121.40
16 05	126.98	23 35	121.25
16 15	126.87	23 45	121.10
16 25	126.77	23 55	120.94
16 35	126.66	24 05	120.79
16 45	126.55	24 15	120.64
16 55	126.44	24 25	120.48
17 05	126.33	24 35	120.33
17 15	126.22	24 45	120.17
17 25	126.11	24 55	120.01
17 35	126.00	25 05	119.85
17 45	125.88	25 15	119.69
17 55	125.77	25 25	119.53
18 05	125.65	25 35	119.37
18 15	125.54	25 45	119.21
18 25	125.42	25 55	119.04
18 35	125.30	26 05	118.87
18 45	125.18	26 15	118.71
18 55	125.06	26 25	118.54
19 05	124.94	26 35	118.37
19 15	124.81	26 45	118.21
19 25	124.69	26 55	118.04
19 35	124.56	27 05	117.87
19 45	124.44	27 15	117.69
19 55	124.31	27 25	117.52
20 05	124.18	27 35	117.35
20 15	124.05	27 45	117.17
20 25	123.92	27 55	116.99
20 35	123.79	28 05	116.82
20 45	123.66	28 15	116.64
20 55	123.52	28 25	116.46
21 05	123.39	28 35	116.28
21 15	123.25	28 45	116.10
21 25	123.12	28 55	115.92
21 35	122.98	29 05	115.73
21 45	122.84	29 15	115.55
21 55	122.70	29 25	115.37
22 05	122.56	29 35	115.18
22 15	122.42	29 45	114.99
22 25	122.28	29 55	114.81

TABLE XV.—*Areas of quadrilaterals of Earth's surface of* 10′ *extent in latitude and longitude.*

[Derivation of table explained in section (6); use of table explained on page 23.]

Middle latitude of quadrilateral.	Area in square miles.	Middle latitude of quadrilateral.	Area in square miles.
° ′		° ′	
30 05	114.62	37 35	105.14
30 15	114.43	37 45	104.91
30 25	114.24	37 55	104.68
30 35	114.04	38 05	104.44
30 45	113.85	38 15	104.21
30 55	113.66	38 25	103.97
31 05	113.47	38 35	103.74
31 15	113.27	38 45	103.50
31 25	113.07	38 55	103.26
31 35	112.88	39 05	103.02
31 45	112.68	39 15	102.78
31 55	112.48	39 25	102.54
32 05	112.28	39 35	102.30
32 15	112.08	39 45	102.06
32 25	111.87	39 55	101.82
32 35	111.67	40 05	101.57
32 45	111.47	40 15	101.33
32 55	111.26	40 25	101.08
33 05	111.06	40 35	100.83
33 15	110.85	40 45	100.59
33 25	110.64	40 55	100.34
33 35	110.43	41 05	100.09
33 45	110.22	41 15	99.84
33 55	110.01	41 25	99.59
34 05	109.80	41 35	99.33
34 15	109.59	41 45	99.08
34 25	109.37	41 55	98.83
34 35	109.16	42 05	98.57
24 45	108.94	42 15	98.32
34 55	108.73	42 25	98.06
35 05	108.51	42 35	97.80
35 15	108.29	42 45	97.55
35 25	108.07	42 55	97.29
35 35	107.85	43 05	97.03
35 45	107.63	43 15	96.77
35 55	107.41	43 25	96.50
36 05	107.19	43 35	96.24
36 15	106.96	43 45	95.98
36 25	106.74	43 55	95.71
36 35	106.51	44 05	95.45
36 45	106.29	44 15	95.19
36 55	106.06	44 25	94.92
37 05	105.83	44 35	94.65
37 15	105.60	44 45	94.38
37 25	105.37	44 55	94.11

TABLE XV.—*Areas of quadrilaterals of Earth's surface of 10′ extent in latitude and longitude.*

[Derivation of table explained in section (6) use of table explained on page 23.]

Middle latitude of quadrilateral.	Area in square miles.	Middle latitude of quadrilateral.	Area in square miles.
° ′		° ′	
45 05	93.84	52 35	80.90
45 15	93.58	52 45	80.60
45 25	93.30	52 55	80.29
45 35	93.03	53 05	79.98
45 45	92.76	53 15	79.68
45 55	92.48	53 25	79.37
46 05	92.21	53 35	79.06
46 15	91.94	53 45	78.75
46 25	91.66	53 55	78.44
46 35	91.38	54 05	78.13
46 45	91.10	54 15	77.82
46 55	90.82	54 25	77.51
47 05	90.55	54 35	77.19
47 15	90.27	54 45	76.88
47 25	89.99	54 55	76.57
47 35	89.70	55 05	76.25
47 45	89.42	55 15	75.94
47 55	89.14	55 25	75.62
48 05	88.85	55 35	75.30
48 15	88.57	55 45	74.99
48 25	88.28	55 55	74.67
48 35	88.00	56 05	74.35
48 45	87.71	56 15	74.03
48 55	87.42	56 25	73.71
49 05	87.13	56 35	73.39
49 15	86.84	56 45	73.07
49 25	86.55	56 55	72.75
49 35	86.26	57 05	72.43
49 45	85.97	57 15	72.10
49 55	85.68	57 25	71.78
50 05	85.39	57 35	71.46
50 15	85.09	57 45	71.13
50 25	84.80	57 55	70.80
50 35	84.50	58 05	70.48
50 45	84.21	58 15	70.15
50 55	83.91	58 25	69.82
51 05	83.61	58 35	69.49
51 15	83.31	58 45	69.17
51 25	83.01	58 55	68.84
51 35	82.71	59 05	68.51
51 45	82.41	59 15	68.18
51 55	82.11	59 25	67.84
52 05	81.81	59 35	67.51
52 15	81.51	59 45	67.18
52 25	81.20	59 55	66.85

TABLE XV.—*Areas of quadrilaterals of Earth's surface of* 10′ *extent in latitude and longitude.*

[Derivation of table explained in section (6); use of table explained on page 23.]

Middle latitude of quadrilateral.	Area in square miles.	Middle latitude of quadrilateral.	Area in square miles.
° ′		° ′	
60 05	66.51	67 35	50.93
60 15	66.18	67 45	50.57
60 25	65.84	67 55	50.21
60 35	65.51	68 05	49.85
60 45	65.17	68 15	49.49
60 55	64.84	68 25	49.13
61 05	64.50	68 35	48.77
61 15	64.16	68 45	48.41
61 25	63.82	68 55	48.05
61 35	63.48	69 05	47.69
61 45	63.14	69 15	47.33
61 55	62.80	69 25	46.97
62 05	62.46	69 35	46.60
62 15	62.12	69 45	46.24
62 25	61.78	69 55	45.88
62 35	61.44	70 05	45.51
62 45	61.10	70 15	45.15
62 55	60.75	70 25	44.78
63 05	60.41	70 35	44.42
63 15	60.06	70 45	44.05
63 25	59.72	70 55	43.69
63 35	59.37	71 05	43.32
63 45	59.03	71 15	42.95
63 55	58.68	71 25	42.58
64 05	58.33	71 35	42.22
64 15	57.99	71 45	41.85
64 25	57.64	71 55	41.48
64 35	57.29	72 05	41.11
64 45	56.94	72 15	40.74
64 55	56.59	72 25	40.37
65 05	56.24	72 35	40.00
65 15	55.89	72 45	39.63
65 25	55.54	72 55	39.26
65 35	55.19	73 05	38.89
65 45	54.83	73 15	38.52
65 55	54.48	73 25	38.15
66 05	54.13	73 35	37.78
66 15	53.78	73 45	37.41
66 25	53.42	73 55	37.03
66 35	53.06	74 05	36.66
66 45	52.71	74 15	36.29
66 55	52.35	74 25	35.91
67 05	52.00	74 35	35.54
67 15	51.64	74 45	35.17
67 25	51.28	74 55	34.79

TABLE XV.—*Areas of quadrilaterals of Earth's surface of 10′ extent in latitude and longitude.*

[Derivation of table explained in section (6) use of table explained on page 23.]

Middle latitude of quadrilateral. ° ′	Area in square miles.	Middle latitude of quadrilateral. ° ′	Area in square miles.
75 05	34.42	82 35	17.27
75 15	34.04	82 45	16.88
75 25	33.66	82 55	16.50
75 35	33.29	83 05	16.11
75 45	32.91	83 15	15.73
75 55	32.53	83 25	15.34
76 05	32.16	83 35	14.95
76 15	31.78	83 45	14.57
76 25	31.40	83 55	14.18
76 35	31.03	84 05	13.79
76 45	30.65	84 15	13.40
76 55	30.27	84 25	13.02
77 05	29.89	84 35	12.63
77 15	29.51	84 45	12.24
77 25	29.13	84 55	11.86
77 35	28.76	85 05	11.47
77 45	28.37	85 15	11.08
77 55	27.99	85 25	10.69
78 05	27.62	85 35	10.30
78 15	27.24	85 45	9.92
78 25	26.85	85 55	9.53
78 35	26.47	86 05	9.14
78 45	26.09	86 15	8.75
78 55	25.71	86 25	8.36
79 05	25.33	86 35	7.97
79 15	24.95	86 45	7.59
79 25	24.57	86 55	7.20
79 35	24.18	87 05	6.81
79 45	23.80	87 15	6.42
79 55	23.42	87 25	6.03
80 05	23.04	87 35	5.64
80 15	22.65	87 45	5.25
80 25	22.27	87 55	4.86
80 35	21.89	88 05	4.47
80 45	21.50	88 15	4.09
80 55	21.12	88 25	3.70
81 05	20.73	88 35	3.31
81 15	20.35	88 45	2.92
81 25	19.97	88 55	2.53
81 35	19.58	89 05	2.14
81 45	19.20	89 15	1.75
81 55	18.81	89 25	1.36
82 05	18.43	89 35	0.97
82 15	18.04	89 45	0.58
82 25	17.65	89 55	0.19

TABLE XVI.—*Actual intervals corresponding to* 0.01 *inch on maps of various scales.*

[Derivation of table explained in section (13).]

Scale.	Intervals in feet.
$\frac{1}{250000}$ = 0.253 inches to 1 mile	208.333
$\frac{1}{126720}$ = 0.500 inches to 1 mile	105.600
$\frac{1}{125000}$ = 0.507 inches to 1 mile	104.167
$\frac{1}{63360}$ = 1.000 inches to 1 mile	52.800
$\frac{1}{62500}$ = 1.014 inches to 1 mile	52.083
$\frac{1}{31680}$ = 2.000 inches to 1 mile	26.400
$\frac{1}{30000}$ = 2.112 inches to 1 mile	25.000

Miscellaneous Constants.

		log.
Base of Naperian logarithms	$\varepsilon = 2.7182818$	0.4342945
Log ε = modulus of common logarithms	$\mu = 0.4342945$	9.6377843 — 10
Radius in seconds of arc	206264.8	5.3144251
Radius in minutes of arc	3437.7468	3.5362739
Radius in degrees of arc	57.29578	1.7581226
Ratio of circumference to diameter of circle	$\pi = 3.14159265$	0.4971499

Dimensions of the Earth as represented by Clarke's spheroid (of 1866*).*

Semi axis major . . . feet	$a = 20926062$	7.3206875
Semi axis minor . . . feet	$b = 20855121$	7.3192127
(Eccentricity)^2	$e^2 = 0.00676866$	7.8305030 — 10
Perimeter of meridian ellipse . . . miles	24859.76	
Circumference of equator . . . miles	24901.96	
Area of earth's surface . . . square miles	196940400	

Relations between English and metric units of length. Clarke's values.

No. inches in 1 meter	39.370432	1.5951702
No. feet in 1 meter	3.2808693	0.5159889
No. yards in 1 meter	1.0936231	0.0388677
No. meters in 1 inch	0.0253998	8.4048298 — 10
No. meters in 1 foot	0.3047973	9.4840111 — 10
No. meters in 1 yard	0.9143917	9.9611323 — 10
No. meters in 1 mile	1609.3296	4.2066450

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